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ABSTRACT

The curriculum guide consists of a set of assessment tools, curriculum decision guidelines, instructional recommendations, and sample activities focused on teaching basic social and communication skills to children with autism and severe developmental handicaps. Section One provides an introductory discussion of issues related to effective socialization, emphasizing the need to promote social competence within dyadic interactions. An assessment model utilizing direct observation, interviews with caregivers and teachers, and informal testing is presented in Section Two. Section Three outlines a systematic and detailed set of curriculum decision guidelines organized around five strands: (1) anticipating events in the context of familiar social routines; (2) using socially directed behaviors to reestablish preferred activity or to obtain desired objects; (3) using functional communication; (4) expanding upon basic communication by expressing various categories of meaning; (5) combining two categories of meaning when communicating. Suggestions for classroom organization are offered in Section Four, followed by a section describing effective instructional techniques for teaching functional social and communication skills. Substantial appendices include references, sample activities for each curriculum strand, and a self-instructional guide to teaching communication skills in naturally occurring context. (JW)

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A Guide to Instructional Programming
For Social and Communicative Interactions

The Social Competence Curriculum Project: A Guide to Instructional Programming For Social and Communicative Interactions

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THE SOCIAL COMPETENCE CURRICULUM PROJECT

The SCCP Model

The SCCP Model consists of a set of assessment tools, curriculum decision guidelines, instructional recommendations, and sample activities focused on teaching basic social and communication skills to children with autism and severe developmental handicaps. It differs from traditional curriculum models for this population in its recognition that socialization is a result of increased social competence within individual social exchanges. More traditional approaches have viewed it as the acquisition of isolated social skills or as the result of increased opportunities for contact with peers and friends.

A number of overlapping goals have guided the development of the SCCP assessment and curriculum materials. We have attempted to develop a model which will be useful for teachers, language specialists, and psychologists, but which does not reduce the complex set of dynamics underlying social and communicative development to a simple checklist of developmentally ordered "milestones" or to a task analysis of the performance demands of typical school, home, or community environments. Rather, we have attempted to prompt systematic consideration of several additional aspects of early social/communicative development which we believe have important implications for the design of curriculum and instruction for students with autism and severe handicaps. Thus, three major themes of the SCCP model consist of:

a) recognition that successful socialization, or acceptance into a social group or network, is the result of a process involving social/communicative interactions between individuals.

b) recognition that these basic dyadic exchanges require social competence, or the ability to use social/communicative skills effectively in interactions with individual partners across various environmental contexts.

c) recognition that facilitation of social competence and socialization requires consideration of the student's general social environment; in particular, classroom organization and instructional strategies can be devised to promote social and communicative behavior.

The assessment tools, curriculum framework, and sample instructional activities presented in this guide represent an approach which includes these considerations in program planning for students with few social or communication skills. We urge teachers and others to use it as an initial set of guidelines to be modified, adapted, and revised to fit their own individual students and instructional settings.

ONE

THE SOCIAL COMPETENCE CURRICULUM PROJECT

Section One

Introduction

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THE SOCIAL COMPETENCE CURRICULUM PROJECT

Introduction

In recent years special education efforts towards the socialization of students with autism and severe handicaps have shifted from a focus on teaching isolated social skills selected from developmental checklists towards a focus on programming skills relevant to the student's daily social interactions. With this shift in focus, peer-mediated training programs (Strain & Fox, 1981) and special friends programs (Voeltz, 1980) have proliferated. While such programs have been effective in increasing opportunities for contact with peers and friends, and while they have also provided students with a larger repertoire of relevant social skills, little or no emphasis has been placed on increasing the student's competencies at the most basic level of interaction, the dyad. Every social interaction involves at least two interactants and communicative, as well as social, abilities. The student's social/communicative ability within dyadic interactions can thus be identified as a basic building block in efforts to socialize autistic and severely handicapped students.

Beyond the social/communicative dyad, including interactions with teachers and peers, ever-widening social contexts can be identified in the student's world (Bronfenbrenner, 1977). The classroom represents the context over which special educators have traditionally exerted the most control. The school represents the macro framework in which the micro structure of the classroom exists. With respect to social/communicative programming for the student at this level, considerations relevant to interactions with nonhandicapped peers becomes particularly important. The family, neighborhood, and community have often been relegated a position outside the domain of special educators. However, they represent critical components of the student's social world which must be considered in long-term educational planning.

The effective socialization of autistic and severely handicapped individuals thus requires contemplation of two major themes: 1) recognition of the interactive dyad as a foundation of competent social functioning, and 2) identification and modification of the specific environmental contexts in which there are opportunities for social behavior, recognizing that changes occur as those contexts widen to include the classroom, family, school, neighborhood and community. Issues relevant to socialization will be explored further in the following section.

The Socialization of Individuals with Autism and Severe Handicaps

The concept of socialization carries with it many connotations. In this guide, socialization and acceptance into a social group or network will be viewed as the result of a process involving social and communicative responses between people. Those responses are rule governed, at least to the extent that individual participants in a social exchange reliably affect the subsequent behavior of one another, and perhaps to the extent that the interaction is shaped by larger cultural expectations or norms. Additionally, socialization is viewed herein as a complex process whereby the student acquires behaviors necessary to be considered a competent member of his culture.

Implications of Social Segregation

There are some substantial implications when potential members of a group are socially isolated or segregated. Within many tribal organizations, socialization into the group is necessary to be considered a human being, while people outside the group are something less. Echoing this theme, Wolfensberger (1972) has suggested that handicapped persons are often cast into the role of "subhumans" by those in human management fields. Human service policies which functionally segregate people may actually have the outcome of a self-fulfilling prophecy; that is, once socially segregated, a person is denied access to role models and behavior contingencies that provide the opportunity to learn social behaviors necessary for acceptance into a group. Since the excluded person (as a direct result of segregation) does not display social responses necessary for inclusion in the group, the initial decision to segregate is seemingly justified.

While the integration of handicapped and nonhandicapped students into the same setting is a necessary condition for socialization, simple desegregation is unlikely to be effective in promoting age-appropriate social development. Integration alone is not sufficient to create changes in social groups or networks characterized by genuine participation of severely handicapped students. Accordingly, a major responsibility for special educators is to directly promote socialization.

Strategies to Facilitate Socialization

There have been two major approaches to facilitating the socialization of students with autism and other severe disabilities: 1) the direct training of social skills to students with handicaps, and 2) informational and awareness exercises designed to increase the acceptance of newly integrated students. These are not mutually exclusive and most model integration projects have actively pursued both avenues.

In many social skill training programs, the teacher directly prompts social behaviors in appropriate contexts. The usefulness of such training is frequently limited by problems related to skill generalization. Although the student learns to respond to the teacher, little generalization to peers may be observed. In such adult-centered approaches, the student apparently learns to depend on the adult to identify and prompt responses. The overriding purpose of social skill training is thus defeated as the student does not develop the capacity to engage in self-generated social exchanges.

Peer-mediated training (Strain & Fox, 1981) has been proposed as a possible alternative to adult-centered models. The advantage of using peers or siblings as agents of behavior change is that the resultant social behaviors are more likely to be generalized to other peers of the same age. In peer-mediated training, peers are taught to prompt and reinforce social, leisure, and/or play responses as they interact with the severely handicapped student. Although peer-mediated training has been shown to be an effective teaching strategy, such systems may carry some unintended negative costs. The already unequal social relationship between a nonhandicapped peer and a handicapped student is exaggerated by the authority role assigned to the peer. In all natural friendship interactions, people prompt and teach one another. However, peer-mediated training is often heavily weighted towards conceptualization of the handicapped student as a perpetual pupil. A strong possibility exists that the structure itself of peer-mediated interventions blunts development of the mutuality or reciprocity characteristic of naturally occurring exchanges within social groups or networks. Genuine socialization is reflected not only in new skills learned but, in addition, is expressed in the formation of a series of friendship relationships with people in the student's immediate social community. These friendship relationships are largely determined by the way in which the student communicates. It is suggested herein that traditional social facilitation strategies be revised to accommodate the fact that a central feature of successful socialization is the acquisition of social/communicative competence.

The Development of Social Competence: Towards Meaningful Social Relationships for the Individual with Autism or Severe Handicaps

A fundamental consideration in the establishment of meaningful social relationships for students with autism and severe handicaps involves assessment of social competence within dyadic interactions. Social competence is reflected in the student's ability to use communication skills effectively in interactions with a partner across various environmental contexts. Through effective use of communication skills, the student is perceived by others as a socially competent individual and socialization, or acceptance into the social group, is facilitated.

Effective use of social/communicative abilities can be defined with specific reference to the handicapped student. One indication of effectiveness is the student's capacity to employ whatever communicative devices to accomplish desired ends for himself in his daily living. Exactly how communicative attempts function for the student is of primary interest. The ability to convey a request or a protest, for example, is a functional communication skill. Less important is the structural form of the student's communicative attempts, for example his ability to produce grammatically correct sentences or his ability to produce perfectly formed gestures, such as a pointing response. Social competence, as expressed through effective use of communicative behaviors, is reflected more in the student's ability to achieve end results for himself through communicative devices across the day than in the ability to produce grammatically perfect sentences. Complementary to this idea is the notion that nonverbal communicative means, such as eye gaze behavior and hand gestures perhaps accompanied by vocalizations, can be just as effective in accomplishing social/communicative goals as can verbal communicative means. In fact, for students with severe handicaps, nonverbal communication skills may often be more efficient, effective, and generalizable to other settings than rotely learned, limited verbal responses.

Effectiveness of social/communicative behavior also refers to flexibility of the student's responses. It is a fact of communication that multiple options in behavior can achieve a single social/communicative goal. For example, a pushing away motion with the hand is sufficient to communicate to someone rejection of an offered item, but other options exist as well for expressing this rejection, such as a head shake or saying "no." If a variety of behavior options are available to the student, he can learn to select responses most appropriate and effective for individual circumstances.

Related to the notion of multiple behavior options is the idea that communicative attempts must sometimes be repaired or revised to make a message understandable to the communicative partner. The revision of communicative behaviors is frequently used even in adult social exchanges, and this capacity can be just as useful for nonverbal students as for verbal students. For example, a student might attempt to communicate a request for water at snack time by vocalizing and looking at the teacher. If the teacher tells the student that she doesn't understand the request, the student might revise the communicative attempt by vocalizing and pointing at the water faucet, alternating gaze from the water faucet to the teacher. The revised attempt is more likely to be understood, and it is certainly indicative of an important social/communicative skill.

Social competence is thus reflected in the student's ability to accomplish specific goals for himself through social interactions with others, in the ability to use both verbal and/or nonverbal means to achieve those goals employing communicative revision strategies when appropriate, and finally, in recognition and use of multiple response options demonstrating communicative flexibility. The degree to which a student acquires these skills will certainly vary depending on individual capacities, but maximizing the student's performance in as many ways as possible should be considered in the planning stages of a student's social/communicative program.

Social Competence Across Contexts

Social competence is also reflected in the capacity to use communication skills effectively across situational contexts. Teachers have long been aware that social and communicative events take place in highly complex situations. Traditionally, attempts have been made to control context by "stripping" it to eliminate bothersome variables (Mishler, 1979), and students have been taught in rigorously controlled training settings. A different perspective is taken here. The context itself is identified as a resource for the student to understand his everyday life. If behaviors are taught in contexts which are functionally relevant to the student's daily needs, he will better understand the meaning of his behavior. Training should be initiated as early as possible in a variety of natural contexts across the student's day as well as in discrete training contexts when necessary.

The student's ability to use social/communicative skills in a variety of settings directly relates to the issue of generalization. Oftentimes, autistic or severely handicapped students do not generalize responses from the initial training setting to use in other situational contexts. The student's general social repertoire thus remains basically unchanged. In other words, while teachers often provide programming to increase the use of functional and appropriate behaviors within specific limited social or recreational settings, in the absence of additional training in related settings generalized use of these behaviors is not typically observed for even simple social interactions. In such cases it is questionable whether the student's acquisition of social skills represents a genuine or lasting restructuring of his social repertoire. With this problem in mind, three aspects of generalization are considered important in social/communicative programming.

One indication of generalization is the use of a newly learned behavior in novel situations. For example, if the student learns to reject a food item by pushing it away and shaking his head from side to side, can this protest behavior be used in novel contexts, such as when a peer offers an undesired item at recess? The specific behaviors targeted to accomplish the protest should be easily transferable to other settings, and target behaviors should be taught in novel settings as early as possible in program implementation.

Another concern related to generalization is maintenance of a newly learned skill once intervention techniques are discontinued. Teaching the student behaviors that are functional for him in his everyday life, regardless of the specific means used, will facilitate the maintenance of skills. For example, if the student learns to request desired objects or interactions, whether he does so verbally or through a simple reaching gesture, this requesting behavior is one that can be effective for him in numerous daily contexts and not just in the training setting. Thus, target behaviors are selected so that even when intervention strategies are discontinued those behaviors maintain social/communicative power for the student across contexts.

Changes observed in social behaviors which have not been directly trained are the most profound indication of genuine social learning. For example, if the student has learned the power of a simple declarative or commenting response in getting attention, such as offering someone an object, does he try new ways to achieve that same social/communicative goal (attention-getting) in a new setting? In a different context he might hold up a completed drawing or a puzzle to show someone in order to gain his attention, instead of offering an object. Both behaviors function as comments or declarations in that an experience is being shared with someone else, and both have an attention-getting component. However, the specific form taken by the behavior in each of these contexts is unique. In order for this type of generalization to occur, the student must anticipate a specific effect, like attention-getting, and attempt multiple behavior options until that effect is achieved. This type of response generalization represents significant evidence of social learning on the part of the student in that he continually modifies his response based on the feedback given to him by other persons. Further, this kind of effect represents a genuine dyadic social exchange. It is believed that emphasis placed on the functions of social and communicative behaviors rather than the structural form of those behaviors increases the likelihood of this type of generalization, or of meaningful changes in the student's general social repertoire.

Social competence for individuals with autism or severe handicaps has been described as an aggregate of skills which can be promoted by the classroom teacher. One such skill is the student's effective use of social/communicative abilities, including the capacity for functional communication, whether it is verbal, nonverbal or a combination thereof. A second is the communicative flexibility accomplished through the exercise of multiple response options and revision strategies. A third skill is the capacity for successful use of these abilities across various situational contexts.

Social Competence and Social Validation

A final issue relevant to the development of social competence is that of social validation. The extent to which the student is perceived by others in his environment, including peers and teachers, as a socially competent individual validates the effectiveness of social and communicative programming from a societal perspective. For most autistic or severely handicapped individuals, it would be unrealistic to assume that they can be perceived by others as socially competent in the same sense as nonhandicapped persons. Rather, each student brings unique and individual competencies to social settings which must be accommodated in programming for that student. In the selection of initial social and communicative goals for a student, his current level of functioning is used as a basis on which to build and maximize the observed degree of social competence. As a result of increased communicative abilities, the student's social relationships should improve, and he will subsequently be viewed by others as a more socially competent individual.

As communication skills are developed, nonhandicapped and severely handicapped students can more reliably affect each other's behavior. While the ability to reliably and reciprocally affect another's behavior is the fundamental basis of dyadic socialization, it is important to monitor the social validity of the dyadic interaction. That is, the results of training need to be evaluated in terms of peer acceptance of students with handicaps during dyadic interactions in naturally occurring social, work, or learning contexts.

Facilitation of Social Competence and Socialization: Classroom Organization and Instructional Strategies

The needs of autistic and severely handicapped individuals to develop social and communication skills poses a serious challenge for assessment, curriculum planning, and intervention. As indicated earlier, social integration without at least minimal competence in interpersonal communicative exchanges is very difficult if not impossible. It is not surprising that efforts to improve social skills have been minimally effective when children have been taught in one-to-one isolated settings without major consideration given to the characteristics of their everyday social environments. Significant increases in communication and social skills beyond improved functioning in isolated settings is seldom achieved with this population. This may be due to the limitations of traditional intervention approaches.

In order to effectively evaluate and plan curriculum for students with autism or severe handicaps it is necessary to look at their behavior as it occurs in their natural surroundings. This means using assessment procedures and curriculum methods that allow practitioners (teachers, speech/language clinicians, para-professionals) and peers to become sensitive to ongoing social and communication events in the classroom and home environment. This type of evaluation and program planning has certainly occurred in informal ways for years, but emphasis has been placed on the skills or behaviors of the individual student, teacher, or parent rather than considering their dynamic interaction in social exchanges. The Social Competence Curriculum Project offers a model for assessing the student in naturally occurring situations, so that not only his behavior is recorded but the importance of significant people and situations in his environment is also evaluated. These can be the basis for promoting social and communicative behavior. Critical concerns in implementing this approach include consideration of the classroom or home environment as well as consideration of specific teaching strategies.

Environmental Issues

With respect to home and classroom environments, there is considerable evidence to suggest that important differences in an individual's social behavior exist in association with situational or contextual factors (Furnham & Argyle, 1981; Guralnick, 1978; Peck & Cooke, 1983). Such factors include person and setting familiarity, similarity of partners, developmental status of partners, preferred play activities, and reinforcement patterns with partners. Intervention strategies are delineated later in this guide that consider contextual variations associated with social interaction.

A particularly important concept in this guide related to social/communicative programming for autistic and severely handicapped students is that of environmental responsiveness. The responsiveness of others in a young child's world has been cited as a specific phenomenon related to the achievement of early social and communicative competence (Ainsworth, 1973; Lewis & Goldberg, 1969; Lock, 1978; Ainsworth & Bell, 1974). Responsiveness to communicative attempts made by the child apparently has a number of positive results: 1) the adult facilitates learning of increasingly intentional and efficient communicative efforts; 2) the child is provided the security of a predictable social base from which he can freely explore the environment; 3) the child develops a generalized expectancy of control; and 4) as a result of selective responsiveness, the child's communicative behavior becomes increasingly differentiated. Environmental responsiveness is recognized within the SCCP model as a critical variable in establishing and maintaining social/communicative competencies. Through such responsiveness the student learns the power of communicative attempts in controlling his environment and in creating functional social interactions.

Instructional Issues

The next major concern in implementation is the particular teaching strategies employed in social and communication training. Although the instructional techniques discussed in this section might be considered relevant to professionals and para-professionals only, they can be adapted for use by parents, peers, siblings, or caregivers outside of the school environment. In fact, many natural opportunities for social and communicative events occur in the home or community that are not available in the classroom.

Traditional language training programs are typically implemented in the context of a structured setting with discrete training trials administered over a period of time. This allows for maximum control within the training setting and for the repetitive practice of skills often believed necessary to learn the "basics" of social or communicative behavior. Due to the lack of generalization to non-instructional settings, an integrative model for training in the natural environment is proposed, similar to Halle's (1982) model, which employs a combination of incidental teaching strategies, delay techniques, modeling procedures, and choice-making opportunities. The use of naturalistic cues (Ferster, 1967; Falvey, Brown, Lyon, Baumgart & Schroeder, 1980) is encouraged to facilitate functional communication skills and awareness of logical means-end relationships in the social environment.

Specific Techniques

With respect to specific teaching techniques, incidental teaching (Hart & Risley, 1975) is defined as interactions between the adult and student that occur in unstructured spontaneous situations and that result in student learning. According to Hart and Risley, when the child initiates interactions or makes requests, he creates contexts for incidental teaching by the adult. In taking advantage of these opportunities and depending on the student's initial attempts to interact, the teacher provides prompts or cues for appropriate responses when needed. This requires much skill on the part of the teacher in that the student's communicative behavior must be evaluated during ongoing interactions, and appropriate responses must be selectively prompted and reinforced.

The delay procedure is additionally recognized as a technique which can facilitate social/communicative responses in the natural environment (Halle, 1982). For example, an expected behavior like assistance in opening a door can be purposely delayed by the teacher. When the student produces a communicative response such as pointing at the door or verbalizing, the teacher then opens the door. As suggested earlier in this introduction, a variety of behavior options are available to the student in this particular context, and any context-appropriate communicative attempt should be considered acceptable. If the student fails to respond with an appropriate request or to otherwise communicate, the teacher can model or prompt a response and possibly require the student to imitate the model before proceeding with the interaction.

Another teaching technique is to provide choice-making opportunities. Autistic and severely handicapped students are seldom given choices in the classroom or at home, with most decisions made for them by teachers, parents and other authority figures. Opportunities to make personal choices regarding objects and events provides students with a greater sense of control in their lives than do traditional highly structured classroom settings.

This discussion provides an introduction to several instructional concepts suggested for social/communicative programming. Implementation strategies are further detailed later in this guide. By employing the type of instructional procedures described herein, the teacher provides more opportunities for communication in the natural environment than do traditional discrete trial training practices. These opportunities enhance the possibility of increased social understanding of the world for autistic and severely handicapped individuals.

Conclusion

Social integration begins at the level of a dyadic interaction between handicapped and nonhandicapped students. In order to have successful exchanges at the dyadic level, students with autism and other severe handicaps require extensive intervention. Traditional approaches to intervention are frequently ineffective because the student does not generalize such training to the natural context of dyadic exchanges with peers. The SCCP Model predicts that training technology based on features consistent with the structure of natural dyadic exchanges will result in increased communicative and social competence. Rather than targeting communicative gains in terms of student behavior only, changes in the behaviors of teachers, parents and peers need to be included along with a consideration of communicative context. After all, flexibility in responding based on feedback from the other member of a dyad is a sign of social competence. For this purpose, the SCCP project has adapted a variety of assessment and instructional techniques aimed at increasing the communicative effectiveness of both members of the dyad.

Successful implementation of the SCCP Model, however, is not solely the application of several techniques. We believe that social/communicative programming must be based on the belief that from the student's perspective certain events and stimuli are salient. Intervention must begin with adult responsivity to attempts by the student to communicate and control what, for him, are important features of the environment.

TWO

ASSESSMENT

Section Two

Assessment

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INTRODUCTION

This section describes the approach of the Social Competence Curriculum Project to assessment and curriculum planning for student with autism and other severe developmental handicaps. Two areas are considered in which teachers typically report most difficulty in deciding what to teach: communication and social development. Most of the assessment tools described are appropriate for children or adolescents who are functioning at very early levels of social development -- that is, students who have not learned to communicate effectively, who have very limited social interactions with adults and peers, and who exhibit few appropriate play skills.

The model presented in this guide reflects the assumption that various aspects of a student's development (social, cognitive, and communication skills) are all closely intertwined in their contributions to the student's overall ability to effectively deal with people around her. Close examination of the interrelationships between these various skills is critical when dealing with autistic and severely handicapped students. In normal development, advances within one domain are typically accompanied by similar gains in other domains. For students with autism or severe developmental disorders, however, this synchrony in development does not always occur. Such students may be developmentally normal in one area while showing delays or disorders in others; for example, an autistic student may develop sufficient fine motor and visual-spatial skills to complete complicated puzzles or to carry out self-help tasks such as dressing. The same student may exhibit profound delays in the development of relatively simple social/communicative skills such as imitation, communicative gesturing and turntaking. In fact, relatively advanced skills in one area may pose serious problems for assessment since less apparent deficiencies are easily overlooked. Classic examples of such discrepancies are apparent in the excessive echolalic speech of individuals who do not understand the "give and take" of communication. These students may have relatively advanced language skills, but they may fail to use these skills effectively to initiate and/or maintain social interaction. When such individuals are pressed communicatively, their needs and desires may be communicated through rather primitive means, including in some cases screaming, tantruming, and/or overall signs of agitation. To confound the picture more, the same student might easily find his way around, climb fences, know exactly where everything is located within the classroom and display great skills in putting puzzles together (even if upside down!). Similar discrepancies may exist for largely nonverbal students whose cognitive development is often difficult to assess for someone without much experience with this type of student. The following case illustrates the types of skill discrepancies across cognitive, social, and communicative areas which are of critical importance in assessing and teaching these students.

Jay was diagnosed as autistic within the first two years of his life. As an infant he used to rock in his crib for long periods of time. Feeding times were strenuous for him, his mother, and other caretakers. When upset he couldn't be consoled; it was awkward to hold him, as his body didn't mold to those of others. Despite early diagnosis and active participation in early intervention programs, Jay's behavior became so unmanageable that he was placed in a state institution for the severely developmentally disabled. While efforts to teach spoken language hadn't resulted in any communicative speech, they had been continued because Jay would respond well to initial teaching efforts. However, at the point of having to discriminate one word from another without help of extraneous cues, Jay's performance would break down to chance level. Frequently, however, Jay would fool people by keeping up his correct performance with an uncanny ability to "read" unintended cues. In addition, Jay was remarkably apt in doing puzzles, mosaics, and other kinds of tasks that are often used to determine school readiness. Consequently, Jay's level of knowledge and capabilities had remained a mystery, leaving his teachers frustrated and Jay without the instruction needed to move on.

To guide further educational efforts, a series of nonverbal assessments was completed. This revealed that Jay had advanced abstraction, classification, and problem solving skills with regard to physical properties of objects and spatial relationships. Nevertheless, he didn't show any of those skills with regard to the social use of objects; i.e., he did not understand the basics of communication and human action, including a lack of awareness of the impact of his own actions. Moreover, his ability to generate compensatory reading strategies, possibly based on perceptual cues, worked against him as this concealed the true nature of his disability. For instance, when it was thought that Jay might have finally learned to hear the difference between "brush" and "cup," it turned out that he had merely learned to respond to the difference between a laminated and a non-laminated card.

Jay had other problems that particularly interfered with his social-communicative development. For example, he had great difficulty imitating sequences of behavior which, notably, are critical features of social and communicative interactions. Thus, Jay could not imitate a repeated vs. a single tapping movement when guided only by sound and motion features. However, he could imitate the different sound patterns if the motions were paired with different location cues. Furthermore, a striking ability to discriminate between written word labels was contrasted by persistent failure to tell the difference between two or more spoken or signed words, despite extensive training. Needless to say, the design of a suitable educational program for Jay was a challenge to everyone working with him.

Skill discrepancies like those displayed by Jay often go undetected, leading teachers to develop curriculum that is either too difficult or too easy. This may set the occasion for tantrums, or even self-injury, when tasks are too hard, or boredom and disruptive behavior when tasks are too easy. The basic goal of the Social Competence Curriculum Project has been to provide teachers with assessment and curriculum guidelines that will assist in identifying appropriate and beneficial programming for children and adolescents like Jay.

ASSESSMENT: WHY, WHAT, AND HOW

The term "assessment" means collecting information on which to base decisions. When a doctor orders x-rays it is a means of assessing, or collecting information about the medical condition of the patient. Assessment is basically what your auto mechanic does when he checks your points, plugs, and compression to determine what sort of work your car needs. Similarly, assessment means collecting information before deciding what to do in the classroom. In a very casual way, good teachers are constantly assessing what is going on before deciding what to do. An example of this is noting that a student has developed good skills in drawing figures and therefore may be ready to begin letter printing. Another example of casual assessment would be noting that a student does not interact well in large groups, and consequently deciding to start some large group structured activities to help develop her social interaction skills.

The SCCP assessment procedure presents guidelines for evaluating the emergent cognitive, social, and communicative skills of students with special needs. Taken together, these skills provide the foundations for a student's overall social competence and functioning. The information generated by the assessment procedures in this section will describe the student's skills and indicate discrepancies in cognitive, social, and communicative competencies. This information will provide the teacher with guidance regarding what to teach the child and how best to teach it. A curriculum decision making model is presented in another section that includes specific activities for teaching key skills. These activities were designed to take advantage of the many teaching opportunities that exist in diverse classroom situations, especially situations such as snack time, free play, and arrival.

What Information is Important?

The assessment devices and procedures included in this section allow the teacher to gather information on a number of different skills across a variety of contexts and situations, providing a fairly comprehensive profile of the student's social/communicative functioning.

Upon completion of the various assessments, information on the social, cognitive, and communicative skills which contribute to overall social/communicative functioning can be examined to identify areas of strengths, weaknesses, and overlap both within and between domains.

How To Get The Information

Autistic and other severely handicapped students have often been considered untestable. The following problems have commonly interfered with testing:

1) Behavior problems may interfere with correct responding.

2) Lack of comprehension of verbal as well as nonverbal, gestural, and facial cues.

3) Lack of motivation to perform the test tasks.

4) Lack of imitative skills required by many assessment tools.

5) Lack of generalization: skills exhibited in other contexts may not transfer to the assessment format used.

In many cases only minimal information is available to teachers with regard to the overall level of functioning of their students. This lack of information is further complicated by the commonly observed developmental inconsistency across domains for many students with autism. Because of these problems, the SCCP Model incorporates a multiple method approach to assessment, including observation, interview, and informal testing formats.

Variation in a student's performance may be observed across formats and situations. Some students respond best in a rather unstructured situation, while a clearly predictable structure is imperative for others. Our experience suggests that many autistic students perform some tasks best within the constraints of a clearly structured and predictable format. Other skills -- such as communicative gestures like pointing, the use of eye gaze to convey a request, or socially interactive behaviors like turntaking -- may be demonstrated only in more natural situations. Utilization of multiple methods of assessment increases the likelihood that a teacher will get a good description of the student's actual skills. An awareness of these possible differences in the student's performance across tasks and situations can aid the teacher in further assessment and subsequent curriculum development.

Characteristics of SCCP Assessment

The major purpose of assessment in SCCP is not to develop a locked-step sequence of teaching targets. Rather, assessment is pursued to help teachers determine 1) the student's behavior and abilities in the areas of _functional communication and social_ interaction, and 2) the social contexts and situations in which interventions should be carried out. The development of an appropriate educational curriculum, rather than the assignment of a developmental level or IQ type rating to the student, is the primary goal of SCCP assessment procedures. This approach to assessment is viewed as an ongoing decision-making process that gives the teacher knowledge of when and how to change instructional procedures and techniques.

Natural Environments

The SCCP model assumes that assessments done in the home and classroom will provide the most relevant information needed for the planning and programming of instruction. More traditional approaches to psychometric assessment which rely predominantly on formal testing of the student in an isolated setting with an unfamiliar person may yield some useful information. However, traditional assessment rarely provides complete information about daily functioning. More importantly, since they are not generally keyed to the student's functional skills, such assessments may not provide sufficient information for the development of relevant interventions. An emphasis on assessment in natural home and classroom settings avoids problems associated with the imposition of standardized constraints on the timing and location of more traditional assessment activities.

Methods of Assessment

The SCCP assessment model entails the use of information from multiple methods of assessment to minimize sources of error and to detect variation in student performance across different social contexts.

Direct Observation. Observation of the student's behavior under both structured and unstructured conditions constitutes a major assessment method utilized in the SCCP model. Qualitative observation methods include anecdotal records or narrative descriptions of each student's behavior in various social contexts. Quantitative observational methods utilized for assessing specific behavior include frequency, duration, and rate measures. These observational methods can provide direct information about the student's performance in relatively natural social situations. The Social Interaction Observation Guide is an example of the observational method of assessment.

Interview Methods. This approach to assessment represents another major type of assessment employed in the SCCP model. Interviews with caregivers and teachers are carried out to determine the student's skill repertoire and behavioral characteristics. Our experience with the SCCP model so far suggests that assessment interviews are often more efficient than analysis of samples of directly observed behaviors. Twenty minutes of interview may be far more informative than five hours of observation, as teachers and parents are familiar with the student's behavior across a wide variety of contexts. A highly structured interview format that uses concrete questions and examples and which focuses on specific social situations should be employed. Interviews may provide crucial information regarding characteristics of the student's home and classroom environments which is highly relevant to the design of the training program. The *Social Interaction Interview* and the *Communication Interview* described in this handbook represent this method of assessment.

Informal Testing. Informal testing is employed to gather large amounts of information in a relatively short time. These tests are not administered in a standardized fashion - rather they are adapted to fit the characteristics of the student being tested. This may involve a change in materials, ways of presenting activities, or methods of motivating students to obtain a useful description of skills. For example, if a student's concept of object permanence is to be assessed, a teacher might alter a regular routine by removing toys or reinforcers from sight to see if the student will continue his search for them. The SCCP assessment package includes informal tests of *Requests for Assistance*, *Imitation* and *Object Use*. Also included in the informal tesing procedures are the *Conceptual Matching* and *Speech Comprehension Probes*.

DIRECT OBSERVATION

Social Interaction Observation Guide

The Social Interaction Observation Guide (see the following recording form) has been constructed to facilitate recording of the student's social interaction skills in a variety of situations. Its purpose is to provide a highly descriptive inventory of the student's social skills for use in curriculum planning rather than a rigorously objective count of various behaviors. While specific behaviors are listed to facilitate observation, they are not intended as an exhaustive category system. Specific behaviors may be "checked off" but observers are strongly encouraged to describe student behavior, as well as situational factors, in the space provided. Notes regarding the relative frequencies of various behaviors may also be recorded here.

The Observation Guide is intended for use during any relatively unstructured social time such as freeplay, recess, or leisure time. The Guide is divided into the sections of Initiation Skills, Responding Skills, Maintenance Skills, and Termination Skills, corresponding to the different phases of a social interaction sequence. While overlap between responding and maintenance skills is evident, some students may respond often and yet they don't continue a series of social exchanges. In each of these sections a number of specific behaviors are listed which represent typical means for carrying out that function. For example, social initiations are often carried out by approaching, touching, offering objects, vocalizing, etc. In addition, space on the recording form is provided for listing other means the student may utilize to initiate social interaction. This reflects the fact that students with autism or severe handicaps may use highly unusual means, such as echolalia, tantruming, or other aberrant behavior, to carry out social interaction functions. Additionally, the appearance of some specific behaviors in more than one functional category on the Observation Guide reflects the possibility that a particular behavior may function in a number of different ways at different times. Thus, imitation may be used by the student to initiate social interaction, but also as a means of responding to the initiations of another student, or as a means of maintaining an ongoing sequence of social exchanges. In planning what to teach the student it would be important to know not only whether she demonstrated a particular behavior, but also how that behavior was used in a social situation.

The Level of Play section of the guide is intended as a general description of the student's play behaviors. Again, for planning purposes, it is important that a description of the play behavior in addition to the situation in which it occurs be noted here. A number of definitions for terms used on the guide are provided below and should be reviewed in preparation for the assessment:

"Social Initiation" refers to acts which start social interaction sequences (e.g., student offers an object to a peer; student approaches and touches the teacher).

"Responding" refers to acts which indicate a change in behavior resulting from the initiation(s) of another person (e.g., student takes an offered object; student smiles when greeted).

"*Maintenance*" refers to acts which serve to continue a social interaction across a series of exchanges (e.g., student repeatedly imitates a peer's behavior in a turntaking fashion; student elaborates on a turn by using a toy in a new way or by introducing new material into the interaction).

"*Termination*" refers to acts which serve to stop an interaction from continuing (e.g., student moves away, turns away, or says "stop it").

Level of Play (based on Parten, 1932)

"*Unoccupied*" refers to a predominance of student behavior which is nondirected, nonexploratory, and nonsocial, such as wandering, sitting, repetitive rocking or other self-stimulatory type behaviors.

"*Isolate*" play refers to nonsocial exploration and manipulation of play materials or engagement in solitary play activities.

"*Onlooker*" play refers to maintaining proximity to other students, together with ongoing or repeated visual regard of the other students or their play materials/activities.

"*Parallel*" play refers to simultaneous use of the same play space or materials as another student, with occasional imitation, showing of objects, or alternation of actions with the other student.

"*Associative*" play refers to engaging in activities directly involving one or more students, including informal turntaking, giving or receiving assistance and directives, and active sharing of materials.

"*Cooperative*" play refers to social play interactions which are structured through specific rules or roles, and which involve explicit and negotiated behavior exchanges. Examples include playing "house" and rule-structured games, such as "Candyland."

The protocol for the Social Interaction Observation Guide follows:

SOCIAL INTERACTION OBSERVATION GUIDE

STUDENT:
LENGTH OF OBSERVATION:
OBSERVER:
CONTEXT:
DATE:

INITIATION SKILLS (E.G., APPROACHES, TOUCHES, OFFERS OBJECT, GESTURES, VOCALIZES, SIGNS/SPEAKS, OTHER)
DESCRIPTION/CONTEXT:

RESPONDING SKILLS (E.G., REORIENTS TOWARD, IMITATES, COMPLIES W/DIRECTIVES, GESTURES, VOCALIZES, SIGNS/SPEAKS, OTHER)
DESCRIPTION/CONTEXT:

MAINTENANCE SKILLS (E.G., MAINTAINS PROXIMITY (FOLLOWS), IMITATES, ALTERNATES/RECIPROCATES (ACTION), TAKES TURNS, OFFERS OBJECTS, VOCALIZES, SIGNS/SPEAKS, OTHER)
DESCRIPTION/CONTEXT:

TERMINATION SKILLS (E.G., REORIENTS AWAY, MOVES AWAY, GESTURES, SIGNS/SPEAKS, OTHER)
DESCRIPTION/CONTEXT:

LEVEL OF PLAY (E.G., UNOCCUPIED, ISOLATE, ONLOOKER, PARALLEL, ASSOCIATIVE, COOPERATIVE)
DESCRIPTION/CONTEXT:

INTERVIEW METHODS

Introduction

The use of structured interviews is extremely helpful when information needs to be collected regarding a student's communicative and social behaviors across a range and variety of contexts. First, the use of a parent or other caretaker who is well acquainted with the student in a variety of social contexts ensures the inclusion of an extremely broad sample of the student's behavior. Second, a thirty-minute interview is a more efficient use of a teacher's time than lengthy direct observations of that student in a variety of social contexts. Third, the inclusion of the parent or other key adults sets the stage for a close working relationship between parents, teachers and guardians. Use of the parent as a key informant communicates to this parent that his or her input is valued and relevant to the development of an effective educational program for his/her child. Furthermore, completion of the interview may serve as a powerful parent education tool. The interview process, because of its emphasis on the importance of nonverbal rather than complex verbal exchange, may help parents to realize that their disabled student may be a more effective communicator, and more socially aware, than they realized.

The interview method is needed as a rapid means of collecting information on a student's communicative and social behaviors across settings. The student's caregivers, including teachers and parents, are the primary informants. The use of a familiar adult who is well-acquainted with the student's range of behavior ensures the inclusion of observations in a large number and variety of situations.

The SCCP interviews are based on the assumption that individuals who have interacted with a student for an extended period of time are capable of informing others on the nature and extent of that student's social/communicative skills if specific questions are asked and clearcut examples are given in the context of a structured and systematic interview.

It is recognized that interview data is subject to personal interpretations of observations which should be substantiated with the aid of other test data or direct observation. However, it is felt that these limitations are far outweighed by the benefits of the interview method, particularly by the inclusion of a second source of information. For example, the interviews may be completed by both parents and teachers.

In summary, the interviews were designed to capture critical information pertaining to:

1) Communicative means and functions.
2) Optimal contexts for communicative and social behavior.
3) Student preferences.
4) Level of cooperative play.

The Social Interaction Interview

This interview is a short questionnaire designed to survey those situations and environments in which social behavior is most commonly and frequently observed. The questions are aimed at describing the student's social behavior with adults as well as with peers. Information obtained from this interview helps the teacher to -

a) recognize contexts in which social behavior is most likely to occur;

b) recognize contexts in which social behavior is least likely to occur; and

c) get an estimate of the level of sophistication of the student's social interaction skills.

The format of this interview cues the teacher to assess how the student interacts with adults as opposed to peers. This allows her to compare differences, if any exist, between these two types of interactions, as well as differences across environments.

Administration

The interview is completed by an interviewer who asks an informant about those behaviors of the student which are social in nature. The informant is asked to describe, in detail, the situations in which those behaviors are observed. This information is recorded in brief while the informant is talking. Specific comments are expanded on at a later time. It is helpful if the interviewer poses a subsequent question while making notes on a previous answer so that the informant may have time to consider the question before answering. This helps to keep the conversation flowing and efficient.

Another useful strategy for obtaining detailed answers is to describe and/or give examples of the situations listed. This sometimes results in more information because it helps the informant to recall and report specific incidents in which the student exhibited social behavior.

Following is The Social Interaction Interview protocol used to record interview data:

SOCIAL INTERACTION INTERVIEW

STUDENT ______________ INTERVIEWER ______________

SCHOOL ______________ DATE ______________

1. Describe a situation in which the student is likely to be most aware of and socially interactive with another person? What do they do?

   ____

   ____

   In which situation(s) is the student most socially interactive with peers? (circle as many as apply)

   A. One to one play
   B. Large group classroom free play
   C. On the playground
   D. Gross motor play
   E. With younger persons
   F. With older persons
   G. Structured situations (i.e., teacher directed, prompted, specific reinforcement)
   H. Unstructured situations (i.e., student directed, little direct teacher control)

2. Based on information given by interviewee, code predominant level of peer play:

   A. Isolate/uninvolved

   (E.G., nonsocial exploration and manipulation of play materials or engagement in solitary play activities)

   ____

   B. Onlooker

   (E.G., maintains proximity to peers, together with ongoing or repeated visual regard of the other persons or their play materials/activities)

   ____

   C. Parallel

   (E.G., simultaneous use of the same play space or materials as a peer, with occasional imitation, showing of objects, or alternation of actions with the other person)

   ____

The Communication Interview

The Communication Interview is designed to gather information regarding the student's communicative means and functions (i.e., what the student does and why he does it, respectively). Communicative functions may be fulfilled by a variety of verbal and nonverbal means, and may include aberrant as well as socially appropriate behaviors. Numerous communicative functions are possible and may include requests for objects or assistance, protests, and statements about things (declarations).

The Communication Interview focuses on the assessment of communicative functions which are typical of everyday exchanges. Five basic communicative functions are examined through the interview protocol. Questions which sample these functions are anchored to the following prototypical situations:

Requests for affection/interaction
Requests for adult action
Requests for objects, food, or things
Protests
Declarations/comments

This listing is far from exhaustive. Thus, in conducting the interview, the interviewer is encouraged to probe for additional contexts and functions which are not explicitly covered. In addition, functions may show overlap and/or be tied to specific situations, particularly when early communicative repertoires are examined. The five functions focused on in the interview are described in more detail below.

Requests for Affection/Interaction

The cue questions for this area assess what the student does to get someone to recognize and attend to her interpersonal needs, e.g., "what does the student do to get an adult to sit nearby?"; "what does the student do to get an adult to tickle her?" The information being sought here is simply a description of the behaviors in which the student engages when seeking interaction.

Requests for Adult Action

This section considers those situations in which the student needs some assistance to accomplish some act, e.g., "what does the student do when she wants help with dressing?" The essential question here is "how does the student go about seeking assistance?" or "how does she let others know that she has a need or wishes to complete some action?" This gives information about the student's awareness of others as a social means to accomplish an end, as well as provides information regarding the student's self-reliance.

Requests for Objects, Food, or Desired Items

This function is similar to the Requests for Adult Assistance function in that some assistance may be needed to accomplish some act. However, in this context the specific result desired by the student is to obtain an object or food item. Some key questions are "what does the student do if an object is out of reach?"; or "what does the student do if he wants to be fed?"

Protest

What is assessed here is whether and how the student conveys various types of protests like expressing dissatisfaction (e.g., when a favorite item is removed), rejecting something (e.g., a food item), denying something (e.g., participation in an activity), or indicating that something is no longer present (e.g., that a preferred item is gone). Some key questions are "what does a student do if a common routine is dropped?", or "what does he do if a favorite toy/food is taken away?"

Declaration/Comment

This function refers to communicative acts which serve to draw or maintain another person's attention toward an object, event, or activity -- solely for the purpose of sharing information or pointing out one's interest in something. Thus, declarations/comments may have less obvious social outcomes than requests or protests. The declarative/comment function is much less "instrumental" than requests or protests -- in the sense that the student is communicating more out of an "interest" in social interaction than as a means of obtaining something. Examples of behaviors that might fulfill declarative/comment functions include showing objects, pointing at an object or a feature of that object, and spontaneous labelling of objects ("ball!") or features of objects ("it's hot!"). As you might anticipate, the declarative/comment function is demonstrated relatively less by children with autism than by either non-handicapped or retarded children (Wetherby, 1982).

The variety of means students may use to accomplish these functions are as follows:

Crying
Tantrums/Self-injury
Aggression
Proximity
Motor agitation
Gaze
Gaze-shift
Gestures/Points
Shakes "no"/Nods "yes"
Pulls other's hand
Routine re-enactment
Vocalization
Intonation
Inappropriate echolalia
Appropriate echolalia
One-word speech/signs
More complex speech/signs

Completing the Interview

As a preparatory step the interviewer should familiarize herself with the definitions and examples of those communicative means which are not immediately apparent. A list of these definitions follows:

aggression: e.g., kicking, biting, pinching, spitting, throwing objects, etc.

facial expressions: e.g., smiling, frowning, pouting, etc.

gaze: eye contact without an attempt to direct the other's gaze elsewhere.

gaze shift: attempt to direct or guide the attention of others by shifting one's gaze from the person to the focus object and back again.

proximity: physical closeness to others or to desired object.

gestures: non-repetitive, conventionalized movements such as pointing or waving.

intonation: variations in vocal or speech pitch, volume, or duration.

vocalization: non-speech use of vocal mechanisms (e.g., "uh-uh-uh-uh").

re-enactment (rituals): acting out partial or entire behavior sequence previously associated with particular outcome, e.g., walking over to the coat rack repeatedly to communicate the desire to go outside.

inappropriate echolalia: literal repetition of speech of others out of context (e.g., "please don't give me eggs" said repeatedly on the playground).

appropriate echolalia: literal repetition of speech of others within context (the above example in the context of eating eggs for breakfast).

At the start of the interview the informant should be asked to report the behaviors the student demonstrates in the contexts presented by the interviewer. The informant's opinions and interpretations are not scored but may be noted in the comment section. The interviewer should only seek detail about the actual behavior which occurs in the situations noted in the various cue questions. However, no attempt should be made by the interviewer to restrict the informant to the specific communicative means listed on the interview. Information judged by the interviewer to be relevant and important but not within those categories listed under communicative functions and means are noted in the "comments" sections or the spaces marked "other."

The interviewer should ask the cue questions corresponding to each communicative function, checking off those means which best correspond to the informant's observations. The interviewer is not expected to go through every communicative means listed to see if it applies. Rather, an unobtrusive probing should be done (see example below.)

During the course of the interview a pattern will emerge which is generally indicative of the student's communicative strategies. The interviewer will often notice that certain categories or blocks of categories are checked frequently whereas other categories will remain blank. As soon as a pattern emerges, the interviewer should point it out to the informant as either a way of reaffirming the student's strategies or reminding the informant of aspects that should have been mentioned. A comment such as "it seems that Nancy doesn't use facial expressions or shift her gaze; is this usually the case?" should suffice.

An illustration of a typical exchange follows:

Interviewer: "What if Madelaine wants an adult to sit near her?"

Informant: "Well, she just comes over and sits down; sometimes she pulls you down next to her."

Interviewer: "What do you mean 'pulls you down?'"

Informant: "She just takes your hands and pulls."
(The interviewer checks off proximity and pulls others' hands.)

Interviewer: "Does she look at you at all?"

Informant: "No, not really."

Interviewer: "Do you mean she doesn't look from you to the seat and back to you?"

Informant: "No, she doesn't do that. Sometimes she looks at you and sometimes she doesn't even give a fleeting glance."

(Interviewer checks off gaze and makes a note in the section for comments under requests for interaction, e.g., "gaze - sometimes passive, sometimes not used at all.")

As noted above a check should be placed in the column under the appropriate communicative means and to the right of the corresponding cue question. In those situations for which there are multiple communicative means used by the student a special comment describing these should be made. For example, the informant reports that when Nancy wants an object out of reach she attempts to get it herself (grabs/reaches). But when that doesn't work she gestures and vocalizes and sometimes pulls an adult's hand (note the use of multiple communicative means). The informant also reports that if she doesn't respond to Nancy's request immediately Nancy is prone to cry and throw things.

In instances such as the above, it will be useful for the interviewer to rank the student's communicative means according to the general order in which they are typically used. Thus, in scoring Nancy for "requesting an object out of reach." the interviewer might mark "grabs/reaches" as 1, "gestures" as 2, "vocalizes" as 2 also, "pulls an adult's hand" as 3, and "crying" and "tantruming" as 4, instead of simply marking checks in the appropriate boxes.

Evaluation of the Interview

In reviewing the interview the student's prevalent communicative means and strategies for requesting and protesting should become apparent. An analysis of the data will reveal those means which the student most typically uses to accomplish various functions. Some students may exhibit a reliance on particular strategies across situations. For example, when requesting affection/interaction the student may use proximity and passive gaze regardless of the particular situation. Other students may evidence a failure to coordinate nonverbal and verbal behavior, e.g., a student may use complex speech but no gaze shift and/or gesture to request an object. Other students may consistently engage in aberrant behavior, i.e., aggression, tantrums, and self-injury when their needs are not immediately understood or met.

The protocol for this interview and related definitions are as follows:

COMMUNICATION INTERVIEW

STUDENT:
EXAMINER:

SCHOOL:
DATE:

CUE QUESTIONS:	Crying	Aggression	Tantrums/Self Injury	Shakes "no"/Nods "yes"	Facial Expression	Passive Gaze	Gaze Shift	Proximity	Gestures/Pointing	Gives Object	Pulling Other's Hands	Touching/Moving Other's Face/Body	Grabs/Reaches	Enactment	Removes Self/Walks Away	Vocalization/Noise	Intonation	Inappropriate Echolalia	Appropriate Echolalia	One-Word Speech	One-Word Signs	Complex Speech	Combined Signs
1. REQUESTS FOR AFFECTION/ INTERACTION WHAT IF S WANTS:																							
adult to sit near?																							
peer to sit near?																							
non-hand. peer to sit near?																							
adult to look at him?																							
adult to tickle him?																							
to cuddle/embrace?																							
to sit on adult's lap?																							
other:																							
2. REQUESTS FOR ADULT ACTION WHAT IF S WANTS:																							
help with dressing?																							
to be read a book?																							
to play ball/a game?																							
to go outside/to store?																							
other:																							
3. REQUESTS FOR OBJECT, FOOD, OR THINGS WHAT IF S WANTS:																							
an object out of reach?																							
a door/container opened?																							
a favorite food?																							
music/radio/T.V.?																							
keys/toy/book?																							
other:																							
4. PROTEST WHAT IF:																							
common routine is dropped?																							
favorite toy/food taken away?																							
taken for ride w/out desire?																							
adult terminates interaction?																							
required to do something doesn't want to do?																							
other:																							
5. DECLARATION/COMMENT WHAT IF S WANTS:																							
to show you something?																							
you to look at something?																							
other:																							

FUNCTIONS:

COMMENTS

1. REQUESTS FOR AFFECTION/INTERACTION

2. REQUESTS FOR ADULT ACTION

3. REQUESTS FOR OBJECT, FOOD, OR THINGS

4. PROTEST

5. DECLARATION/COMMENT

COMMUNICATIVE MEANS DEFINITIONS

AGGRESSION	kicking, biting, pinching, spitting, throwing objects, etc.
FACIAL EXPRESSION	smiling, frowning, pouting, etc.
GAZE	eye contact without gaze shift
GAZE SHIFT	attempt to direct or guide gaze of others by shifting one's gaze from the person to the focus object and back again
PROXIMITY	physical closeness to others or to desired objects
GESTURES	non-repetitive, conventionalized movements
INTONATION	deliberate variation in pitch, volume, or duration
VOCALIZATION	non-speech use of vocal mechanisms (e.g., uh-uh-uh-uh)
ENACTMENT (rituals)	acting out partial or entire behavior sequence previously associated with particular outcome (e.g., walking over to the coat rack to communicate a desire to go outside)
INAPPROPRIATE ECHOLALIA	literal repetition of speech of others out of context (e.g., "please don't give me eggs" said repeatedly on the playground)
APPROPRIATE ECHOLALIA	literal repetition of speech of others within context (the above example in the context of eating eggs for breakfast)

INFORMAL TESTING

It is a good idea to spend a few minutes "establishing rapport" with the student before starting any assessment task. The purpose of doing this is to make the student as comfortable as possible in engaging in an unusual set of activities. This is particularly important if the assessor does not regularly work with the student. Establishing rapport can be accomplished by participating with the student in an activity which she enjoys, possibly a student-initiated activity. A play session with a preferred toy or material might be a good plan to start. During this session preliminary observations can be made of the student's knowledge of the social use of objects and his motivation and ability related to social interactions around objects (e.g., handing objects to the teacher, showing objects, verbalizing, etc.). Finally, it can be observed whether the student is motivated to continue the interaction if it is abruptly terminated, for example by the adult turning away during a high point of the exchange.

Table 1 presents some questions which may be of assistance in analyzing the student's behavior during this initial assessment interaction.

Table 1. Evaluation of Student's Behavior During Informal Play

1) Is repetitive and stereotypic object manipulation predominant, and if so, which actions are predominant?

2) How long does the student attend to one toy or activity?

3) How much problem solving is shown; i.e., can the student discover how to operate a toy, and can he operate a toy after a demonstration?

4) Does the student continue to search for desired objects when you hide them from sight?

5) Is there any evidence of symbolic play (e.g., does the student engage in simple pretending or role plays)?

6) Does the student use objects to get you to interact with her (e.g., shows or hands objects to you)?

7) Does the student try to re-engage you socially after you turn away, and if so, through what means?

Requests for Assistance

Skills the student has developed for requesting objects or assistance are among the earliest and most critical communicative behaviors to appear. Thus, requests are a viable target for initial training efforts. Furthermore, recognizing the student's attempts to request, and teaching him effective and appropriate means for requesting assistance, such as pulling an adult's hand or pointing to desired objects, may help in reducing aberrant behavior like tantruming, as well as in promoting general social competence.

This assessment tool provides a context for observing the ways in which a student secures assistance in a problem-solving situation. Of course, there are many opportunities across the day to look for the ways in which a student requests assistance. What is essential is that you sometimes delay your response to the student for a moment before you do things like tie a shoe, open a door, or reach for a toy. Such situations provide for the most natural assessment of the ability to request assistance. Nevertheless, a more formal and staged situation may be helpful in systematically observing and comparing different students. To do so, the student is presented with a problem in which assistance from an adult is necessary. The student's subsequent attempts to problem-solve are rated along a continuum of communicative behaviors, ranging in complexity from simple exploration strategies to spoken or signed requests for help.

Materials

A transparent plastic container with tight fitting lid (e.g., child-proof medication container) and a favorite food or object that fits in the container.

Administration

1) Have the student seated at a table across from the teacher.

2) Display the transparent container with a favorite food or other favorite item inside.

3) Pick up the container; open it and remove the food. Eat a piece of the food or momentarily play with the object; replace the item, and replace the container lid so that the student cannot obtain the item without help, while saying "Here, you can have some too." If the student doesn't solicit your assistance after a minute or so, try moving your hand near the box or holding palm up to receive the box to prompt some communication.

4) Remain in proximity and respond to any communicative initiations that the student may exhibit. However, do not initiate any assistance unless the student communicates a request in some way.

If student:

- makes a conventional request for assistance, either by signing a request for help, verbally requesting, or offering the object to the teacher,

Then teacher:

- opens the container and returns it to the student thereby ending the trial. The teacher may then opt to repeat the trial or to vary the presentation (see below).

If student:

- exhibits any aberrant behavior during the assessment,

Then teacher:

- discontinues the trial, and may opt to present a variation--this should be done in some later session, to give the student a "fresh" start.

If student:

- does not respond with any problem-solving behavior,

Then teacher:

- presents a variation of the task as follows:

1) Re-model opening the box and eating the candy or using the object contained within, as in step #3.

2) Open the container; present the student with the item, then remove it and repeat the trial.

3) Hold the container in one hand extended towards the student, and alternate gaze from student to container.

4) Open the container, offer to student, but before she obtains the reinforcer, close it and set it down before her.

If student:

- still does not signal for assistance or acknowledge your presence, then the teacher needs to set up a more extensive interactive routine around the container.

1) put the favorite item in the container and hand it to the student, take it back, open it, hand the opened container back, etc.

2) repeat the above sequence as often as needed for the student to start to anticipate these actions.

3) after the student begins to anticipate these actions, delay them to trigger some word or communicative signal.

At this point, assessment and teaching start to closely overlap. This type of training can be implemented across a variety of contexts and activities.

Scoring Protocol for Requests for Assistance

Score the student's behavior in at least three different contexts. For example, asking for juice at snack time, requesting toys at play time, and asking for sandwich pieces at lunch time. Check any of the following categories which apply to the student's behavior in each of the contexts observed:

Vocalizations (except crying or whining which are coded as aberrant behavior).

Shaking/pounding of container.

Manipulation of lid.

Box is moved into teacher's hand.

Pulling of teacher's hand.

Eye contact with teacher initiated by student.

Gaze shift: student looks at box, back to teacher, repeatedly.

Student gestures for help (including pointing).

Aberrant behavior (including self-injury and whining).

Echolalia -- literal repetition of another person's speech, which may be related or unrelated to the current context.

Signed request.

Spoken request (Comment: direct/indirect; polite; gramatically complex/rudimentary.)

Some questions which may assist in analyzing the student's communicative behavior include:

1) Does the student clearly show the intention to communicate with the adult (e.g., through gaze shifts toward adult, pointing, verbalization, or other means)?

2) Does behavior consist mostly of attempts to open the container directly or of frustrated reactions to the problem?

3) Does the student coordinate multiple means for communicating the request (e.g., point, vocalize, and look at the teacher), or does she only request with single behaviors (e.g., only pull the teacher's hand)?

4) Does the student show a number of nonverbal communicative means without using verbal means?

A sample scoring protocol follows:

REQUEST FOR ASSISTANCE PROTOCOL

Student:______________________________ School:________________________

aminer:______________________________ Date:__________________________

With student seated across from you, demonstrate procedure by opening and eating a piece of the food inside, or if a favorite material is used, playing with it momentarily. Then replace the lid on the container tightly so that student cannot obtain the item without help or hand the toy to the student. Remain passive until conventional request for assistance is made. If there is no response within one minute, repeat demonstration and elaborate as necessary. Check any behavior(s) exhibited each trial.

BEHAVIORS	Context 1:			Context 2:			Context 3:		
Trials:	1	2	3	1	2	3	1	2	3
VOCALIZATIONS									
RELATED VERBALIZATIONS									
UNRELATED VERBALIZATIONS									
IMMEDIATE ECHOLALIA									
CONTEXT APPROPRIATE DELAYED ECHOLALIA									
CONTEXT INAPPROPRIATE DELAYED ECHOLALIA									
MANIPULATION OF LID									
BOX IS MOVED INTO TEACHER'S HAND									
PULLING OF TEACHER'S HAND									
EYE CONTACT W/ TEACHER INITIATED BY STUDENT GAZE SHIFT: STUDENT LOOKS AT BOX, BACK TO TEACHER, REPEATEDLY									
STUDENT GESTURES FOR HELP (INCLUDE POINTING)									
ABERRANT BEHAVIOR (INCLUDE SELF-INJURY, CRYING & WHINING)									
SIGNED REQUEST									
SPOKEN REQUEST (DESCRIBE: DIRECT/INDIRECT/ POLITE/GRAMMATICALLY COMPLEX/RUDIMENTARY)									
OTHER BEHAVIORS (DESCRIBE):									
1) ____________________									
2) ____________________									
3) ____________________									
4) ____________________									

REQUEST FOR ASSISTANCE PROTOCOL (continued)

text Descriptions:

Context 1:____

Context 2:____

Context 3:____

COMMENTS:

Imitation

Imitation is a critical social-cognitive skill related to communication and social interaction. It is important to know not only if the student can imitate under highly structured and directed conditions, but also whether the student spontaneously imitates and whether the student uses imitation as a means of problem-solving. The student's mastery of each of these skills is assessed with the following procedures.

Assessment of Spontaneous Imitation

Using a set of common everyday objects or a set of small toys, the teacher may obtain some informal indication of the student's imitation skills. This may be done by probing for spontaneous imitations of actions that the teacher repeats immediately after having observed the student engage in them. Continue probing a step further by repeating actions that the student has engaged in at an earlier time. Then introduce increasingly novel actions which have not been shown by the student previously. The teacher does not specifically prompt the student to imitate here, but simply models a novel behavior and observes whether the student spontaneously copies it.

Assessment of Imitation Skills Under Prompted Conditions

This assessment is done by asking the student to carry out a variety of "Look at me. Do this" tasks. These tasks include imitation of facial expressions, simple vocalizations (e.g., "dee dee," "ba ba"), gestures, and activities (e.g., opening objects, operating toys). Responses can be recorded by calculating the percentage of times in which imitative responses are shown in response to the instructional cue "Do this." The protocol shown on the following page will be helpful in gathering this kind of information.

Upon completing the prompted imitation assessment, answering the following questions may be helpful:

1) What, if any, differences are apparent between the prompted and unprompted imitation performance?

2) What differences are there in the student's ability to respond to various types of modelled behavior (e.g., object use, vocal, motor, etc.)?

IMITATION PROTOCOL

STUDENT:

SCHOOL:

EXAMINER:

DATE:

SCORING PROCEDURE:

CHECK OCCURRENCE AND RECORD TYPES OF BEHAVIORS

1. REPEAT A SIMPLE AND EASILY OBSERVABLE BEHAVIOR THAT THE STUDENT HAS JUST EXHIBITED. DOES THE STUDENT REPEAT THAT BEHAVIOR?

TOTALS

TRIAL 1 ☐ ____________ 2 ☐ ____________ 3 ☐ ____________ # CORRECT

2. MODEL A BEHAVIOR THE STUDENT HAS EXHIBITED AT AN EARLIER TIME. DOES THE STUDENT IMITATE THE BEHAVIOR?

TRIAL 1 ☐ ____________ 2 ☐ ____________ 3 ☐ ____________ # CORRECT

3. MODEL A SIMPLE BEHAVIOR THAT IS NOVEL TO THE STUDENT. DOES THE STUDENT SPONTANEOUSLY IMITATE?

TRIAL 1 ☐ ____________ 2 ☐ ____________ 3 ☐ ____________ # CORRECT

4. OBJECT USE: INSTRUCT THE STUDENT TO "DO THIS" AN[illegible]EL A SIMPLE OBJECT USE. DOES THE STUDENT IMITATE YOU?

TRIAL 1 ☐ ____________ 2 ☐ ____________ 3 ☐ ____________ # CORRECT

5. MOTOR: INSTRUCT THE STUDENT TO "DO THIS" AND MODEL A SIMPLE MOTOR BEHAVIOR (.E.G., CLAP HANDS, TOUCH TOES, ETC.). DOES THE STUDENT IMITATE?

TRIAL 1 ☐ ____________ 2 ☐ ____________ 3 ☐ ____________ # CORRECT

6. VOCALIZATION: INSTRUCT THE STUDENT TO "DO THIS" AND MODEL A SIMPLE VOCALIZATION (E.G., DIDI, BABA, MAMAMA). DOES THE STUDENT IMITATE YOU?

TRIAL 1 ☐ ____________ 2 ☐ ____________ 3 ☐ ____________ # CORRECT

7. SOCIAL BEHAVIOR: INSTRUCT THE STUDENT TO "DO THIS" AND MODEL A SOCIAL BEHAVIOR (E.G., GREETING BEHAVIOR, OFFERS OBJECT, ETC.). DOES THE STUDENT IMITATE YOU?

TRIAL 1 ☐ ____________ 2 ☐ ____________ 3 ☐ ____________ # CORRECT

COMMENTS:

Using Imitation for Problem-Solving

Discrepancies may exist between imitation skills as probed so far and the use of imitation as a problem-solving strategy. Students who have been trained to imitate body movements, for example, often fail to generalize those skills to more functional contexts. The use of imitation as a problem-solving strategy is most readily assessed in a highly motivating context. Therefore, watching for naturally occurring situations is generally easier than staging them. For instance, your student might want to turn the tape recorder or T.V. back on after you have turned it off. To take advantage of this situation, show him how to turn it on and then turn it off again. Then wait and observe the student's attempts to imitate your behavior. Similarly, you might want to turn on a water faucet, get candy from a vending machine, turn on a dryer, or flip on a light. In case the student does not imitate your behavior in these situations, the subsequent series of probes provide a method for further assessing this ability.

The teacher may assess the student's use of imitation in problem-solving situations by using the following steps:

Probes for Imitative Problem Solving

1) Jack-in-the-box. Present the toy to the student to first determine if he or she already knows how to use it. If s/he does not, model its use at least two times. Then hand the toy to the student. Does the student imitate?

2) Obtaining candy. Two adults will be needed for this task. One adult stands on the other side of a door, holding candy or a desirable object. The second adult models behavior for the student by going to the door and knocking on it. The first adult opens the door and gives the second adult a piece of candy. The latter sits back down with the student and directs the student's attention toward the door. Does the student imitate the procedure for getting the candy?
Variation: Use a peer instead of an adult to

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demonstrate the door knocking. The student might be more likely to imitate a peer than an adult.

3) Gumball machine task. Adult models pressing of lever and getting gum. The adult tells the student, "You can have some gum too!" and gestures toward the gumball machine.

4) Puzzle box. Adult models opening a puzzle box. The box is then given to the student, and the adult says, "Let's see if you can open it, too." Does the student imitate to open the box?

The following questions may assist in analyzing the student's performance:

1) Does the student attempt a new approach to problems after seeing someone else succeed with that approach?

2) Does the student attend to (i.e., visually orient toward) what someone else is doing to solve the problem?

3) Is the student more likely to observe and imitate the behavior of peers or adults in problem-solving situations?

4) Is there a difference in the student's ability to imitate sequences of behavior that center around people (e.g., door knocking probe) than those that center around objects only (e.g., gumball machine).

The following protocol may be used as an assessment form for imitative problem-solving:

IMITATION FOR PROBLEM-SOLVING

JACK-IN-THE BOX

PRESENT TOY TO STUDENT TO FIRST DETERMINE IF HE ALREADY KNOWS HOW TO USE IT. IF HE DOES NOT, MODEL FOR HIM AT LEAST TWO TIMES. THEN PRESENT HIM WITH TOY. DOES THE STUDENT IMITATE?

COMMENTS ON PERFORMANCE:

OBTAINING CANDY

TWO ADULTS WILL BE NEEDED FOR THIS TASK. ONE ADULT STANDS ON OTHER SIDE OF DOOR WITH CANDY. THE SECOND ADULT MODELS BEHAVIOR FOR STUDENT: GOING TO THE DOOR AND KNOCKING ON IT. THE FIRST ADULT OPENS THE DOOR AND GIVES THE SECOND ADULT A PIECE OF CANDY. THE LATTER SITS BACK DOWN WITH THE STUDENT, SAYING "YOU CAN GET ONE, TOO!" AND POINTS TO THE DOOR. DOES THE STUDENT IMITATE THE PROCEDURE FOR GETTING CANDY?

COMMENTS ON PERFORMANCE:

GUMBALL MACHINE

ADULT MODELS PRESSING OF LEVER AND GETTING GUM. THE ADULT THEN TELLS THE STUDENT, "YOU CAN HAVE SOME GUM TOO!" AND GESTURES TOWARD THE GUMBALL MACHINE.

COMMENTS ON PERFORMANCE:

PUZZLE BALL

ADULT MODELS OPENING OF BALL. THE BALL IS THEN GIVEN TO THE STUDENT, WHO IS TOLD "LET'S SEE IF YOU CAN OPEN IT NOW."

COMMENTS ON PERFORMANCE:

Object Use Rating Scale (OURS)

The OURS is a simple method for probing how the student relates to objects and, in particular, whether he demonstrates social knowledge regarding appropriate object use. There may be a discrepancy observed between the student's visual-perceptual understanding of objects and the student's social or conventional understanding of objects. In other words, the student may demonstrate the ability to take apart and put back together a small toy car composed of Lego puzzle pieces but he may not display any understanding of the car as a toy that can be "driven." In this assessment, information is obtained with minimal reliance on verbal interaction with the student, thus simplifying the situation for students who have difficulty processing language input. If the student has shown diversified and appropriate object manipulations and some pretend (symbolic) play, there is no need to use the Object Use Rating Scale. Instead, good use can be made of available observation and experimentation instruments (e.g., McCune-Nicolich, 1980; Wolf & Gardner, 1981). However, if the object manipulations seem largely non-functional or inappropriate, use of the OURS is recommended.

Administration

Two sets of objects are presented to the student during this assessment. During the first part of the assessment, a ball, brush, spoon, box with a lid, and two cups are placed on the table in front of the student. The teacher then says, "You can play with these," accompanied by some inviting gestures. For the next three (3) minutes, the student is allowed to manipulate the objects. In this context the teacher should be non-directive but yet responsive, leaving the initiations up to the student. The teacher should interact with the student only by casually commenting on what he is doing and responding in a conventional manner to any student initiations. For example, "That looks like fun" or "You put the spoon in the cup" are possible social comments. With regard to student initiations, if the student offers the teacher an object, such as a box, it should be accepted and followed by a response such as "Thank you," or by the teacher peeking in the box to see what's inside. Do not ask the student specific questions related to the objects or their use, as this may affect the student's spontaneous manipulations and explorations of them. Although an occasional verbal commentary may be appropriate, verbalizations should be kept to a minimum.

During the second part of the assessment, a telephone, car and man, hammer and nail, and two combs are substituted for the first set of objects. Again, the teacher cues the student by saying, "You can play with these" and allows the student to manipulate the objects for three minutes. This set of objects lends itself more to social or pretend-type play than does the first set of objects.

Scoring Protocol

The following protocol is used to record the student's examinations, manipulations, and use of the objects throughout the assessment. Each time a specific behavior occurs, it should be recorded. With regard to the first seven categories on the observation form, only one category should be recorded when behaviors occur in conjunction with one another. For example, if the student picks up the object and also puts it inside another object, the relational use category (V) should be scored instead of the basic recognition category (I). Although basic recognition could have been scored as well, the assessment credits the student for the most complex category of object use observed. The scoring protocol for this assessment is on the following page.

OBJECT USE RATING SCALE

STUDENT: SCHOOL:

EXAMINER: DATE:

SCORING PROCEDURE:

PART I: BALL, BRUSH, SPOON, BOX WITH LID, TWO CUPS

WITH MATERIALS ON TABLE GIVE CUE "YOU CAN PLAY WITH THESE" AND ALLOW STUDENT TO MANIPULATE OBJECTS FOR THREE MINUTES. RECORD FREQUENCY AND DESCRIBE TYPES OF BEHAVIORS.

PART II: TELEPHONE, TRAIN OR CAR AND MAN, HAMMER AND NAIL, TWO COMBS

REPLACE FIRST SET OF OBJECTS AND REPEAT PROCEDURE FOR THREE MINUTES.

BASIC RECOGNITION: INCLUDING TOUCHING, PICKING UP, LOOKING AT, MOUTHING

☐ ____________ ☐ ____________ ☐ ____________

☐ ____________ ☐ ____________ ☐ ____________

ACTS DIRECTLY ON OBJECT: NOT NECESSARILY APPROPRIATE SCHEMA; INCLUDING PUSHING AWAY/PULLING TOWARD, THROWING, BENDING, BANGING, TAPPING/FLIPPING, DROPPING ON FLOOR, TURNING OVER, SMELLING, SHAKING, SQUEEZING, CHANGING ANGLE, ETC.

☐ ____________ ☐ ____________ ☐ ____________

☐ ____________ ☐ ____________ ☐ ____________

PART/WHOLE RECOGNITION: INCLUDING PUTTING TOGETHER OR TAKING APART OBJECT; MANIPULATION OF OBJECT PARTS

☐ ____________ ☐ ____________ ☐ ____________

☐ ____________ ☐ ____________ ☐ ____________

BASIC MANIPULATION OF TWO OBJECTS AT ONE TIME: INCLUDING PARALLEL HOLD, TOUCHING ONE OBJECT TO ANOTHER, BANGING TWO OBJECTS TOGETHER

☐ ____________ ☐ ____________ ☐ ____________

☐ ____________ ☐ ____________ ☐ ____________

RELATIONAL USE OF TWO OR MORE OBJECTS: INCLUDING MATCHING, STACKING, PUTTING ONE INSIDE ANOTHER, GATHERING, LINING UP, SEPARATING

☐ ____________ ☐ ____________ ☐ ____________

☐ ____________ ☐ ____________ ☐ ____________

PRE-SYMBOLIC USE OF OBJECTS: INCLUDING CONVENTIONAL USE OF OBJECTS AND FUNCTIONAL INTERRELATING OF OBJECTS; NO EVIDENCE OF SYMBOLIC PLAY

☐ ____________ ☐ ____________ ☐ ____________

☐ ____________ ☐ ____________ ☐ ____________

SYMBOLIC USE OF OBJECTS: INCLUDING SYMBOLIC PLAY AND/OR CREATIVE USE OF OBJECTS

☐ ____________ ☐ ____________ ☐ ____________

☐ ____________ ☐ ____________ ☐ ____________

SOCIAL USE OF OBJECTS: INCLUDING OFFERING OBJECT TO EXAMINER, PULLING EXAMINER'S HAND TOWARDS OBJECTS (SHOULD NOTE IF NO APPROPRIATE GAZE COORDINATED WITH THIS BEHAVIOR), ETC.

☐ ____________ ☐ ____________ ☐ ____________

☐ ____________ ☐ ____________ ☐ ____________

USES LANGUAGE IN RELATION TO OBJECT: INCLUDING LABELING, VOLUNTEERING RELATED VERBAL STATEMENTS, ETC.

☐ ____________ ☐ ____________ ☐ ____________

☐ ____________ ☐ ____________ ☐ ____________

After completing the OURS rating scale, review of the following questions may be helpful:

1) What are the prevailing types of object manipulations?

2) Are there any functional object manipulations and, if so, are they stereotyped (e.g., brushes teeth in a manner related to extensive daily training routines)?

3) Are objects used to initiate or maintain a social interaction?

4) Was there a prevalence of object manipulations geared toward visual and spatial explorations of the objects, rather than toward conventional use?

Conceptual Matching Probes

The Conceptual Matching Probes involve a series of learning and generalization tasks, presented within a highly structured format. The assessment of cognitive capabilities in students with autism tends to be difficult because they often fail to perform on commonly used assessment tools. When traditional cognitive assessments are attempted in environments which are not carefully structured or when verbal, gestural or imitative responses are required, high rates of aberrant behaviors may be observed. Similarly, lack of responses during observational and informal assessments may make cognitive assessments highly inconclusive. The often erratic and unpredictable skill profiles associated with autism further complicates this dilemma. For instance, during Piagetian probes for object permanence or means-ends behaviors, students may not respond or may appear to be disinterested in the task. The Conceptual Matching Probes were designed to bypass some of these commonly found problems. The need for verbal instructions is eliminated, the response requirements are tailored around skill areas and the need for structure is incorporated within the assessment format. The Conceptual Matching Probes consists of a highly structured series of object matching tasks ranging in conceptual complexity. Systematic discrimination training, that is, instruction, is followed by generalization trials, which sample conceptual knowledge.

What Kind of Information is Obtained?

The assessment content of the probes was designed to reveal both the student's learning characteristics and conceptual abilities. Throughout the assessment procedure the following questions can be answered:

1) How quickly does the student acquire new skills?
2) What type of problem solving strategies does the student demonstrate?
3) What kind of prompting procedures are most effective?
4) What kind of correction procedures are most effective?
5) Does over selectivity occur?
6) Does the student demonstrate a conceptual understanding of the physical attributes of objects?
7) Does the student demonstrate a conceptual understanding of the functional properties of objects?
8) Is the student's performance constrained by introducing a limited set of rigid rules, as evidenced by generalization and error performance?

Conceptual Matching Subtests

To answer these and other questions, the *Conceptual Matching Probes* contain a number of match to sample tasks which range from basic perceptual discriminations to more complex conceptual ones.

1) *Matching identical objects* (e.g., a red plastic cup with an identical red plastic cup).
2) *Matching similar objects* (e.g., a red cup with a styrofoam cup).
3) *Matching broken and whole objects* (e.g., a red plastic cup with one half of an identical cup).
4) *Matching parts to comprise a whole* (e.g., the top of a jar with its bottom).
5) *Matching tools with their complementary parts* (e.g., pen with a piece of paper).
6) *Matching functionally equivalent objects* (e.g., a hairbrush with a comb).

It is important to note that any of these suggested objects can be substituted with objects of similar attributes (e.g., two blue toothbrushes rather than two red cups).

In order to avoid any verbal or other performance bias, specific training is provided prior to the testing trials. During these pretesting trials, only two training items are used and the student is systematically prompted and reinforced for correct responding. Following these trials, the true assessment items are presented as generalization tests. While administering the Conceptual Matching Probes to the student, there are various opportunities to observe and obtain additional assessment information. By occasionally interrupting and/or changing the routine, you can examine what responses the student will make in order to request something or to protest your actions. At the same time, you can observe the student's comprehension of object permanence, cause-effect and means-end relationships.

Curriculum Considerations

While cognitive training in isolation is not promoted, the information gathered from the Conceptual Matching Probes is helpful for overall programming purposes. First, the information provided will help in setting long-term objectives. Goals set for students with very limited conceptual skills and slow acquisition rates would be extremely different from those for students who learn quickly and exhibit flexible rule systems. Secondly, the interrelations between the cognitive and communicative domains are of direct relevance when social competence is pursued. A student whose cognitive performance far outweighs his social/communicative performance could most likely benefit from extensive social interaction training, which utilized the cognitive strengths observed (e.g., involving object and spatial knowledge). Similarly, a student who excels within the social, cognitive, and communicative domains, but whose formal language is more delayed, is a prime candidate for a flexible alternative communication system which meets his cognitive and communicative needs. In teaching the student, if cognitive performance is greatly enhanced by structure, social interaction training should begin in a structured manner, with predetermined predictable interactions. However if the student's social skills excel beyond his cognitive capabilities, the student may benefit most by receiving communicative training which capitalizes on social interactions.

When to Use the Assessment

It is suggested that this assessment tool be utilized only when more common assessment tools fail to give relevant information on the student's cognitive skills and competencies. As mentioned earlier, this is often the case when trying to test students who display autistic-like characteristics, such as limited language skills and disruptive behaviors. Administration of the Conceptual Matching Probes can be very time consuming and difficult in some classroom settings. Therefore, it is suggested that this assessment be used only for those students who are not easily assessed in a less structured context. Furthermore, the probes may not be that informative if the student demonstrates symbolic play or functional speech. On the other hand, if a student demonstrates only the most primitive object manipulations as judged by the OURS (e.g., continuous mouthing of objects), he is not likely perform any of the matching tasks without extensive training.

Summary

1) The Conceptual Matching Probes are a highly structured set of object matching tasks which include systematic discrimination training, followed by generalization tests.

2) Students who display many autistic behaviors, and who are difficult to assess in less structured contexts are usually suitable candidates for the Conceptual Matching Probes.

3) The assessment content of the probes was designed to reveal the student's learning characteristics and conceptual abilities.

4) The six (6) subtests range from basic perceptual discriminations to more complex conceptual ones.

5) While administering the probes to the student, there are various opportunities to observe and obtain additional assessment information.

6) Information provided by the Conceptual Matching Probes will help in setting long-term goals for the student.

7) The Conceptual Matching Probes is not suitable as a routine assessment, but may be extremely helpful to evaluate students whose abilities are very difficult to judge.

Implementation of Conceptual Matching Probes

To begin the assessment, search the classroom for objects that are interesting and/or familiar to the student. Examples of suitable objects are contained on the scoring protocols. While collecting the test items, remember to include two (2) sets of training objects, along with four to six (4-6) sets of generalization objects. The format for the presentation and scoring of all the subtests of the assessment are described in the first subtest (Matching Identical Objects).

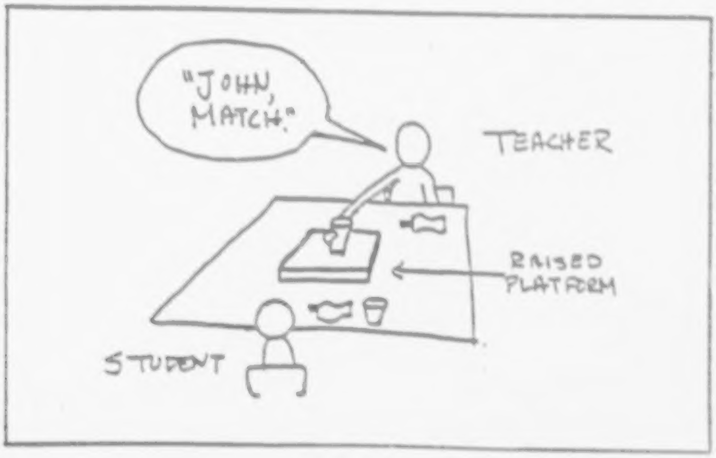
Administration

I. Training Trials

The following procedures for conducting the training trials are conducted with two sets of objects (such as two identical plastic cups and two identical tubes of toothpaste):

1) Display one cup and one tube in front of the student.

2) Between the student and teacher, on a raised or otherwise clearly visible "platform" present the cup, and say "Match." Since the meaning of the instruction will become clear through the presentation of repeated learning trials, the use of additional verbal instructions is not critical. In fact, a predominantly nonverbal approach is preferable. In order to get the student to attend, his or her name may be called, or vocalization or gestures (such as snapping fingers) to direct the student's attention may be helpful.



If student:

- hesitates (5 seconds or more),

Then teacher:

- models correct response by placing the plastic cup from in front of the student next to the cup on the platform.

If student:

- responds incorrectly, by placing tube on platform next to cup, or by reaching for cup on platform, etc., or,

If student:

- does not respond at all,

Then teacher:

- prompts correct response, using this sequence of cues, one at a time:

a) Model correct response. If still unsuccessful,
b) Gesture, point to, or gaze at cup. If still unsuccessful,
c) Manually (physically) prompt student through correct response.

If student:

- responds correctly, by matching his cup to cup on platform,

Then teacher:

- reinforces his response and repeats trial, using the cups only.

If student:

- continues to respond correctly,

Then teacher:

- gradually fades out whatever prompts were used.

If student:

- responds correctly to cup presentation three times consecutively WITHOUT PROMPTING,

Then teacher:

- presents toothpaste tube, repeating procedure as in steps #2 and #3, again using differential reinforcement and prompting to ensure that the student understands what she is supposed to do.

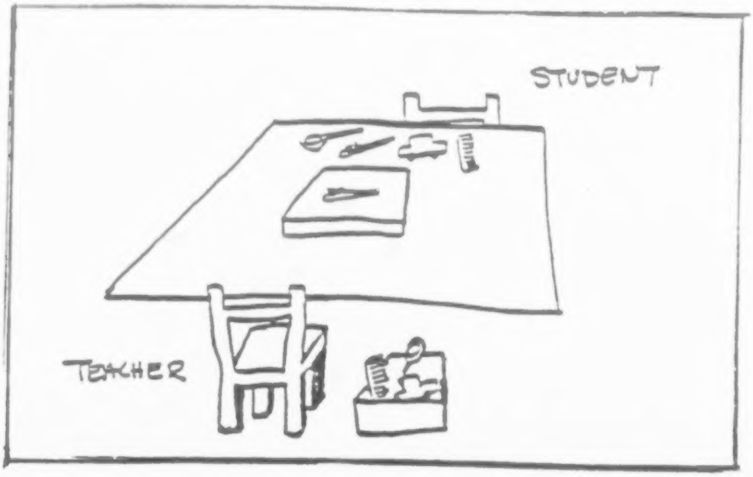
Alternate the presentation of these objects until a consistent criterion for performing the discrimination is reached. This indicates that the student understands what she is supposed to do. The decision to move on to the generalization trials is up to the teacher. The student's overall learning rate, attention span, and the extent to which prompts were used should all be considered. Generally, we have found that about three (3) consecutive correct responses, or a total correct score of 90% is a good indication that the student understands the task. Once the student meets criterion on the training trials, actual testing on the same task can begin. The training trials protocol follows:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

After 5 consecutive correct responses, proceed to testing (generalization) trials.

II. Testing Trials

Once criterion on the training items is met, remove the training items and introduce four (4) new items to which the student must generalize the matching principle. These first four (4) items should be more familiar; such as the toothbrush, spoon, car, and comb. The layout of materials can be as follows:



Procedure

1) Display the four (4) new objects in front of the student.

2) Present the identical objects to be matched as before, one at a time. However, do not present them in the same sequence as they are displayed before the student.

3) Provide general reinforcement (such as "Good work!"; "That's fine!") for all responses whether correct or incorrect, in order to maintain responding and interest in the task. If the use of tangible reinforcement is still required, it should be used contingent upon on-task behavior, attention, etc., rather than upon correct performance, since testing trials presented are designed to test generalization rather than new learning.

If student:

- responds incorrectly on any presentation,

Then teacher:

- repeats presentation of ALL items three (3) times. This gives the teacher an opportunity to observe the consistency of responding, both correctly and incorrectly. The following is an example of how the testing trial protocol will look after it has been filled in with the names of the objects that were used for the assessment:

		1	2	3	4
		Item: cookie	Item: shoe	Item: puppet	Item: spoon
1	Item: cookie				
2	Item: shoe				
3	Item: puppet				
4	Item: spoon				

record a (+) if correct
record a (-) if incorrect

% Correct _____

Comments:

Conceptual Matching Probes: Procedural Variations

The early cognitive abilities related to the understanding of causality, means-end and object permanence may be assessed informally by the following variation in presenting reinforcers to the student.

An indication of whether the student has a notion of causality may be assessed by observing whether or not the student understands the reward contingencies, and anticipates them. The use of containers with lids facilitates the combining of assessments of *means-end*, *object permanence* and *communicative problem solving*. Once the student is responding consistently and correctly, and anticipates the onset of the next trial, you may:

1) Delay presentation --
    a) What does the student do?
2) Remove the reinforcer from sight --
    a) Does the student track the movement?
3) Hide the reinforcer --
    a) Does the student know that it continues to exist (does he search for it?)
4) Move the reinforcer to a different location --
    a) Does the student realize where it is (again, does he search for it?)
5) Put the reinforcer in a non-transparent container --
    a) Does the student realize that the reinforcer is inside (does he look for it insider the container?)
    b) Does the student attempt to remove the lid or otherwise open the container (means-end?)
    c) Does the student seek assistance? If so, by what means?
6) Put the reinforcer in a transparent container, and

repeat steps (a) and (b) above --

a) Are there any discrepancies between responses to the two types of containers?

The decision as to when to introduce variations in the above procedures is up to the individual teacher. Noticeable decreases in the student's rate and latency of responding provide good cues as to when to introduce variation into the routine. Ideally, varying the presentation should serve to increase attending to the task as it is unexpected and novel.

A complete sample protocol that can be used to administer the Conceptual Matching probes follows:

Conceptual Matching Probes: Data Sheets

Student: ______________________ School: ______________
Examiner: _____________________ Date: ______________
Student's Age: ________

Subtest #1: MATCHING IDENTICAL OBJECTS

Pairs of Objects with Identical Characteristics

Practice Trials:

Examples of Objects: Identical blocks
Identical Crayons

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

After 5 consecutive correct responses, proceed to testing (generalization) trials

Testing Trials:

Examples of Objects: 2 identical cups
2 identical cookies
2 identical forks
2 identical hairbrushes

		1	2	3	4
		Item: ______	Item: ______	Item: ______	Item: ______
1	Item: ______				
2	Item: ______				
3	Item: ______				
4	Item: ______				

record a (+) if correct
record a (-) if incorrect

% Correct ________

Comments:

Subtest #2: MATCHING SIMILAR OBJECTS

These objects differ in at least one attribute (size, color, shape) but belong to the same object class

Practice Trials:

Examples of Objects: 2 different blocks (different size, different color, etc.)
2 different crayons (different color, different length, etc.)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

After 5 consecutive correct responses, proceed to testing (generalization) trials

Testing Trials:

Examples of Objects: 2 different cups (i.e., glass & styrofoam)
2 different forks (i.e., red & blue)
2 different cookies (i.e., Oreo & Wafer)
2 different hats (i.e., beret & top hat)

		1	2	3	4
		Item: ________	Item: ________	Item: ________	Item: ________
1	Item: ________				
2	Item: ________				
3	Item: ________				
4	Item: ________				

record a (+) if correct
record a (-) if incorrect

% Correct ________

Comments:

Subtest #3: MATCHING BROKEN & WHOLE OBJECTS

These objects should be similar, if not identical, with the matching set containing pieces of matching objects

Practice Trials:

Examples of Objects: Broken crayon/whole crayon
Broken cup/whole cup

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

After 5 consecutive correct responses, proceed to testing (generalization) trials

Testing Trials:

Examples of Objects: Broken fork/whole fork
Broken pencil/whole pencil
Broken cookie/whole cookie
Broken toothbrush/whole toothbrush

		1	2	3	4
		Item: ____	Item: ____	Item: ____	Item: ____
1	Item: ____				
2	Item: ____				
3	Item: ____				
4	Item: ____				

record a (+) if correct
record a (-) if incorrect

% Correct ____

Comments:

Subtest #4: MATCHING COMPONENT PARTS

These items consist of objects with component parts which are separate

Practice Trials:

Examples of Objects: lid of a jar/bottom of the jar
puzzle piece/puzzle

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

After 5 consecutive correct responses, proceed to testing (generalization) trials

Testing Trials:

Examples of Objects: Laces/shoes
Ring/ring stack
Pentop/pen
Wheel/car

		1	2	3	4
		Item: ________	Item: ________	Item: ________	Item: ________
1	Item: ________				
2	Item: ________				
3	Item: ________				
4	Item: ________				

record a (+) if correct
record a (-) if incorrect

% Correct ________

Comments:

Subtest #5: MATCHING TOOLS AND COMPLEMENTS

Includes objects which are tools which have obvious complement matches. Each tool should be clearly different from others within the set. Complement items should be displayed before the student; "tools" should be presented as test items.

Practice Trials:

Examples of Objects: Camera & photograph
Knife & cut food item

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

After 5 consecutive correct responses, proceed to testing (generalization) trials.

Testing Trials:

Examples of Objects: Crayon/paper with scribbles
Hammer/nail in piece of wood
Straw/cup filled with water

		1	2	3	4
		Item: ______	Item: ______	Item: ______	Item: ______
1	Item: ______				
2	Item: ______				
3	Item: ______				
4	Item: ______				

record a (+) if correct
record a (-) if incorrect

% Correct ______

Comments:

Subtest #6: MATCHING FUNCTIONAL EQUIVALENCE

These objects should be of the same category according to the way they are used as with the "tool" matching task (Subtest #5). The object pairs should be clearly different from others within the set.

Practice Trials:

Examples of Objects: Dollar and quarter
Brush and comb

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

After 5 consecutive correct responses, proceed to testing (generalization) trials

Testing Trials

Examples of Objects: Crayon/pencil
Car/boat
Sock/shoe
Cracker/raisin

		1	2	3	4
		Item:	Item:	Item:	Item:
1	Item:				
2	Item:				
3	Item:				
4	Item:				

record a (+) if correct
record a (-) if incorrect

% Correct

Comments:

Speech Comprehension Probes

Evaluation of the student's language abilities entails answering the following questions:

1) How much does the student understand speech addressed to her or others? In other words, how are her speech comprehension skills?
2) How much speech can the student actively generate to meet his daily communicative needs? That is, how are his language production skills?

Judgments about comprehension skills are easily misguided because some students are able to get the "gist" of what is being said by attending to contextual cues. For instance, when telling the student to "sit down," he may do so because the teacher is pointing and/or looking at a chair, or because the teacher always tells him to sit down in a particular context. In this case the student may not truly understand the specific words being said. In fact, many students with autistic traits have such a good memory for daily routines that they know exactly what you are going to tell them. As described in the introductory chapter, they may understand the "gestalt" of what is being said in one particular context, but not the independent meaning of the utterance itself. Thus, while autistic-like students may respond appropriately to familiar utterances in specific situations, they may not actually understand individual words. This may ~~e~~ffect a the student's ability to respond appropriately to familiar utterances when they are spoken in unfamiliar contexts. As a result of this, it is not uncommon for students to be considered non-compliant when they, in fact, don't understand what is asked of them. Furthermore, students whose receptive skills are overestimated because of their reliance on contextual cues run the risk of becoming overly cue dependent and behaviorally passive. Thus, knowing the level of receptive skills is important, not only to maximize instructional efficiency, but also to minimize inappropriate behavior and motivational problems.

The Assessment Process

One of the first questions to resolve pertains to the student's comprehension of everyday instructions (see SCCP Assessment Data Summary). Daily observations of the extent to which the student is able to comply with spoken instructions should give a good first indication. However, to get a more accurate appraisal, some further experimentation is needed. The suggestions summarized below provide one starting point for assessing the student's comprehension of instructions.

1) Systematically alter your everyday instructions by adding or deleting a word, changing your tone of voice, or even by saying the opposite of what you usually say. Summarize what you observed through this informal assessment.

2) Make a list of all the various instructions that the student responds to throughout the day. Randomize the list and present 10 instructions in a row out of context. Calculate percent of correct responses for the 10 instructions and periodically readminister this probe to evaluate the student's progress.

If the student responds correctly to these probes, the teacher may vary the instructions by combining two or more at a time, or by presenting instructions that are more abstract, less familiar, and/or more specific. For instance, "give me the tallest cup that is blue" or "give me the cup you picked up last."

In collecting the assessment information outlined so far, take advantage of naturally arising situations throughout the day. This will give a broad indication of the student's overall receptive language abilities when redundant cues are available to help guide responding. To assess the student's understanding of words and word combinations a more structured assessment is recommended.

At the most basic level, the student is requested to hand the teacher one specific object out of a set of objects placed in front of him. The assessment steps involved are summarized below.

Labels for everyday objects

1) Collect a number of objects (6-10) that are familiar to the student.

2) Out of these objects, select two to be presented as initial training items (e.g., a brush and a cup).

-Train the student to pick up an item such as the brush, when you say "Give me..(pause)..brush." If the student fails to respond, prompt him, and reinforce the correct response. Gradually fade prompts so that the student finally hands the brush without being prompted. However, in some cases the teacher may need to keep providing some type of reinforcement to keep the student on task.

-Introduce a second object (e.g., a cup) and train the student to pick up either the cup or the brush when they both are placed in front of him. Prompt and reinforce the student where needed. If the student does not learn the discrimination within one training session, it may be that she is not able to respond on the basis of auditory information alone. If the student begins to respond correctly without prompting, move on to the next step of the assessment.

-Present four (4) new items (the most familiar ones in the set that you have collected) and ask, in random order, the student to hand you the objects. Present all objects at least twice, and calculate the average percent correct responses observed during this time. Do the same with four (4) additional, although less familiar, items and again calculate the average percent correct responses observed.

Before moving on to more complex items you can check whether the student can 1) match objects with pictures of the same objects, and 2) hand pictures, rather than objects, when asked for them. If the student's responses are consistently correct, use a more traditional speech comprehension test, such as the Test for Auditory Comprehension of Language (Carrow, 1973) or the Assessment of Children's Language Comprehension (ACLC; Foster, Giddan & Stark, 1973), which will give a more precise measure of the student's speech comprehension skills.

Labels for Common Actions, Spatial Relationships, and More Complex Semantic Relationships

Utilizing some of the same objects as used above, probe for comprehension of action labels. For instance, ask "Show me drink!", "What do you drink from?", "Which one do you cut?", or "Show me (student's name) brushing teeth." Subsequently, probe for understanding of different labels for the interrelationship of objects (e.g., prepositions, such as "under," "in," or "on top of"). Again, the assessment should begin with training trials which incorporate prompts and reinforcements.

Further Assessments

Verbal instructions can be made increasingly complex. You may want to continue using real objects rather than, or in addition to, more traditional picture-based tests. The direct manipulation of objects -- e.g., the acting out of instructions -- may be more motivating than the mere examination of pictures. To assist in constructing items, review the following list of comprehension questions which includes questions regarding common semantic relationships expressed in early speech.

1) Does the student *orient* toward speech (respond to voices)?

2) Does the student *comply with stereotyped or familiar requests when contextual cues* are available?

3) Does the student comply with *familiar requests when no contextual cues* are available?

4) Does the student *identify familiar objects* in response to spoken oral information when no contextual cues are provided?

5) Does the student *understand single words and short phrases* expressing some semantic meanings, e.g.:

   a) person names
   b) names of objects and attributes
   c) absent person or object
   d) action verbs
   e) possessives
   f) location words
   g) action-object phrases
   h) agent-action phrases
   i) agent-object phrases
   j) agent-action-object phrases

6) Does the student *comprehend more complex speech* expressing a variety of semantic relationships?

Assessing Speech and Language Output

With regard to the evaluation of speech and language, considerably more commercial resources and instruments are available. This section merely provides some commentary and suggestions.

Despite the availability of formal evaluation tools, the assessment of speech/language production skills is often as difficult as the assessment of comprehension skills because of the prevalence of echolalic speech in some of these students. Often, speech produced by autistic individuals sounds more sophisticated than it is. A careful analysis of their linguistic ability may reveal that much of their speech output consists of rote verbal routines. (For more detail, see Fay & Schuler, 1980; Prizant, 1983; Schuler, 1984; Schuler & Prizant, in press.) Attention to the following questions will help to guide your assessment efforts, even if you employ formal instruments:

1) Does the student produce any approximations of adult speech (i.e., sounds recognizable as letters, syllables, and words)?

2) If so, does this speech serve a communicative function?

3) Does the student exhibit any echolalia?

4) If so, does the echoing serve a communicative function? Review examples.

5) Does the student produce any non-rote original speech?

   If so, review examples, describe the communicative functions served, and assess those relations listed under comprehension questions which are most functional for the student.

In order to get some idea of the student's expressive speech abilities, sample both imitative (echolalic) and more spontaneous verbalizations, throughout the day or within set-up play situations in the context of the speech comprehension probes. In both situations, you may facilitate the sampling by using a tape recorder and by writing narratives of the interaction contexts. By collecting a rather extensive speech sample, you will be able to discriminate between largely echolalic and more creative utterances. If a large number of non-rote and original utterances are observed, an analysis of the semantic relations expressed (see Miller, 1981, and Chapman & Miller, 1981), or a Developmental Rating as described by Lee (1974), can be carried out. Furthermore, utterances can be analyzed in terms of their pragmatic functions to determine whether the student is making requests, comments, protests, directives, or conveying information (Wetherby, 1982; Lund & Duchan, 1983). This will supplement the preliminary information provided by the communicative interview.

If the sample contains mostly echolalic speech, it should be determined (1) which communicative functions are expressed, if any, and (2) how literal the echoing is, i.e., whether the student is able to modify the utterance to fit different contexts. If this latter ability is shown, the complexity of the grammatical exchanges should be examined, along with the semantic notions being expressed (see Miller, 1981).

As far as the functions of echolalic phrases are concerned, a summary of the possible pragmatic functions of both delayed and immediate echolalic speech, as well as the functions listed in the SCCP assessment and curriculum model, can be found in Prizant and Duchan (1981), in Schuler and Prizant (in press), and in Prizant and Schuler (in press).

CONCEPTUAL MATCHING/SPEECH COMPREHENSION

SUMMARY SHEET

STUDENT:

EXAMINER:

SCHOOL:

DATE:

A. CONCEPTUAL MATCHING

I. COMPLETE THE FOLLOWING PERFORMANCE SUMMARY; THE DESCRIPTORS USED REFER TO THE FOLLOWING SCORES:

NOT OBSERVED	:	ZERO CORRECT OR UNTRAINABLE
RARE	:	ONE OR TWO CORRECT OUT OF SIX
COMMON	:	THREE OR FOUR CORRECT OUT OF SIX
OFTEN	:	FIVE OR SIX CORRECT OUT OF SIX

	None	Rare	Common	Often
MATCHES IDENTICAL	☐	☐	☐	☐
MATCHES SIMILAR	☐	☐	☐	☐
MATCHES BROKEN/WHOLE	☐	☐	☐	☐

	None	Rare	Common	Often
MATCHES PART/WHOLE	☐	☐	☐	☐
MATCHES TOOL/COMPL	☐	☐	☐	☐
MATCHES FUNCTIONAL EQUIVALENCE	☐	☐	☐	☐

II. COMMENTS:

1. ACQUISITION OF MATCHING RESPONSE ON TRAINING TRIALS

- ☐ LESS THAN FIVE TRIALS
- ☐ LESS THAN TWENTY
- ☐ TWENTY TO FIFTY
- ☐ UNTRAINED

2. TYPES OF ERRORS

	None	Rare	Consistent
POSITION	☐	☐	☐
FAMILIARITY	☐	☐	☐
PREOCCUPATION/MANIPULATION	☐	☐	☐
SINGLE PERCEPTUAL FEATURE	☐	☐	☐
VARIED PERCEPTUAL FEATURES	☐	☐	☐

3. SCANNING/PROBELM SOLVING STRATEGIES

YES/NO FLEXIBLE SCANNING/DECISION MAKING?

YES/NO MASTERY SMILES?

4. FUNCTIONAL/SYMBOLIC OBJECT USE (NON-SOLICITED)

EXAMPLES: ______________________________

____

____

SCCP Assessment Data Summary

The following data summary sheet was developed to clarify the aggregate picture of student performance across domains sampled. The completion and visual inspection of the data summary helps to pinpoint discrepancies in performance and to design instruction.

As far as the Communication section of the Data Summary is concerned, the relative frequency of the various communicative means and functions are rated as either not observed, rare, some, or frequent. It is expected that predominant means of communication will be used across functions; e.g., a student may use pointing to accomplish more than one function, like obtaining a desired objective or commenting on a drawing. However, inconsistencies may be observed and should be commented on, particularly when communication is very limited. Communication is thus evaluated in terms of the range of means and functions. The greater the range of means and functions the greater the intentionality that can be inferred, particularly when more conventional and/or symbolic symbols have been observed.

Completing the social interaction section involves listing and rating the various behaviors that are used to initiate, maintain, and terminate social interactions. You should clearly understand the terms "functions" and "means" by the time you fill out these sections of the summary (see Interview section of this guide). A relative estimate of the observed level of social play is completed next, followed by summary statements regarding preferred social activities, social partners and contextual variations.

With regard to the ratings of relative behavioral frequency, judgements regarding advanced or complex behaviors entail consideration of idiosyncrasies and other particulars which often make simple conclusions difficult. For the most part, informants will have their own set of expectations and criteria for determining advanced or complex levels of social and communicative competence. The following are some guidelines to help the informant fill out this section of the SCCP summary:

1) In determining what constitutes "advanced" social behavior relative to specific contexts, considerations include the length of interaction, the diversity of functions exhibited, and the complexity of the interaction (e.g., level of play).

2) Consideration of contexts in which "most imitative" behaviors occur should take into account situational characteristics such as structured, unstructured or problem solving situations. The effectiveness, the utility, and the appropriateness of the student's imitation in various settings is also a consideration when identifying an optimal context.

3) Questions pertaining to advanced communicative means and functions require examination along the following dimensions: diversity, effectiveness, appropriateness, complexity, and degree of symbolic communication (i.e., use of pictures, signs, verbal language).

4) The question regarding a context for positive affect relies on the informant's perceptions of the student's enjoyment and a review of situations in which this is most likely to occur.

The second data summary sheet pertains to the cognitive and language domains. Performance on the imitation and object use tasks is summarized using a similar rating scale. If applicable, performance on the conceptual matching is summarized next. The content of the Comments Sections will vary both across students and across informants. A few suggestions for additional information which might be relevant are as follows:

- note relevant student characteristics and idiosyncrasies (e.g., if the student enjoys magazines, a number of activities could be centered around this preference);
- note discrepancies in performance across settings (e.g., student communicates effectively at school but not as well at home);
- note specific ideas for future programming (e.g., add role playing goals to student's daily living skills program); use favorite object manipulations in social/communicative programming).

As far as the language domain is concerned, speech/language comprehension and speech/language production are summarized based on the probes, language samples and observations described earlier.

The completed summary sheet should provide a better picture of strengths and weaknesses of the student assessed, which should provide some clues as to how skill areas may be mobilized across domains. For instance, a student who is very motivated to put lids on containers, but who is generally non-interactive can be taught to take turns putting lids on containers. Similarly, suggestions can often be made with regard to the use of non-speech communication systems. At any rate, completion of the summary sheet will serve as a starting point for program development, which will be discussed in more detail in the Curriculum Planning section of the guide.

The introduction of a formal non-speech communication system, such as sign language and communication boards, would be clearly warranted when severe limitations in the speech and language domain are contrasted by more advanced skills in the areas of social interaction, communication and cognition. This may be evidenced, for example, by joint use of gesture, intonation, facial expression, and physical manipulation, or even by behaviors commonly designated as aberrant or maladaptive, advanced symbolic and social play and, possibly, drawing skills. While the disparities are often not clearcut, the assessment information is still relevant to the selection of a suitable system.

SOURCES OF INFORMATION FOR COMPLETING SCCP DATA SUMMARY

COMMUNICATION

Communication Interview
Request for Assistance
Social Interaction Observation Guide

SOCIAL INTERACTION

Social Interaction Interview
Social Interaction Observation Guide

RELATED ABILITIES

Imitation

Imitation Assessment

Object Use

Object Use Rating Scale

Conceptual Matching

Conceptual Matching Probes

Contextual Variation

All of Above Assessments

The following protocol is used to summarize the SCCP Assessments:

SCCP DATA SUMMARY

STUDENT:
SCORER:

SCHOOL:
DATE:

COMMUNICATION

not obs	rare	some	freq	FUNCTIONS	not obs	rare	some	freq	MEANS
☐	☐	☐	☐	Declarative/Comment	☐	☐	☐	☐	____________
☐	☐	☐	☐	Request for Object	☐	☐	☐	☐	____________
☐	☐	☐	☐	Request for Action	☐	☐	☐	☐	____________
☐	☐	☐	☐	Request for Attention	☐	☐	☐	☐	____________
☐	☐	☐	☐	Protest	☐	☐	☐	☐	____________

COMMENTS:

SOCIAL INTERACTION

not obs	rare	some	freq	INITIATION MEANS	not obs	rare	some	freq	RESPONSE MEANS
☐	☐	☐	☐	____________	☐	☐	☐	☐	____________
☐	☐	☐	☐	____________	☐	☐	☐	☐	____________
☐	☐	☐	☐	____________	☐	☐	☐	☐	____________

				MAINTENANCE MEANS					TERMINATION MEANS
☐	☐	☐	☐	____________	☐	☐	☐	☐	____________
☐	☐	☐	☐	____________	☐	☐	☐	☐	____________
☐	☐	☐	☐	____________	☐	☐	☐	☐	____________

Social Play

not obs	rare	some	freq		not obs	rare	some	freq	
☐	☐	☐	☐	Isolate	☐	☐	☐	☐	Parallel
☐	☐	☐	☐	Onlooker	☐	☐	☐	☐	Associative
					☐	☐	☐	☐	Cooperative

Preferred social activities/situations: ____________

Preferred social partners: ____________

Contextual Variation

In which contexts was most advanced social behavior observed? ____________

In which contexts were most imitative behaviors observed? ____________

In which contexts was most advanced object manipulation observed? ____________

In which contexts were most advanced communicative means observed? ____________

In which contexts were multiple communicative functions observed? ____________

In which contexts were most positive affects observed? ____________

IMITATION

not obs	rare	some	freq	
☐	☐	☐	☐	Repeats own behavior imitated by adult
☐	☐	☐	☐	Imitates own previously demonstrated behavior when modeled
☐	☐	☐	☐	Imitates simple novel behavior modeled by adult
☐	☐	☐	☐	Imitates when prompted to "DO THIS"
☐	☐	☐	☐	motor/gestural response
☐	☐	☐	☐	actions upon objects
☐	☐	☐	☐	vocalizations/speech
☐	☐	☐	☐	Imitates to solve simple problems

COMMENTS:

CONCEPTUAL MATCHING PROBES

not obs	rare	some	freq	
☐	☐	☐	☐	Matches identical
☐	☐	☐	☐	Matches similar
☐	☐	☐	☐	Matches broken/whole
☐	☐	☐	☐	Matches part/whole
☐	☐	☐	☐	Matches tool/complement
☐	☐	☐	☐	Matches functional equivalence

COMMENTS:

OBJECT USE

not obs	rare	some	freq	
☐	☐	☐	☐	Sensory Exploration
☐	☐	☐	☐	Part/Whole
☐	☐	☐	☐	Relational
☐	☐	☐	☐	Conventional
☐	☐	☐	☐	Symbolic

COMMENTS:

SPEECH/LANGUAGE COMPREHENSION

never	some-times	always	
☐	☐	☐	Responds to speech directed to him/her
☐	☐	☐	Understands familiar instructions/comments in context
☐	☐	☐	Understands familiar labels for everyday objects/actions
☐	☐	☐	Understands global meaning of short phrases and single labels
☐	☐	☐	Understands two word phrases or equivalents
☐	☐	☐	Understands more complex grammatical constructs

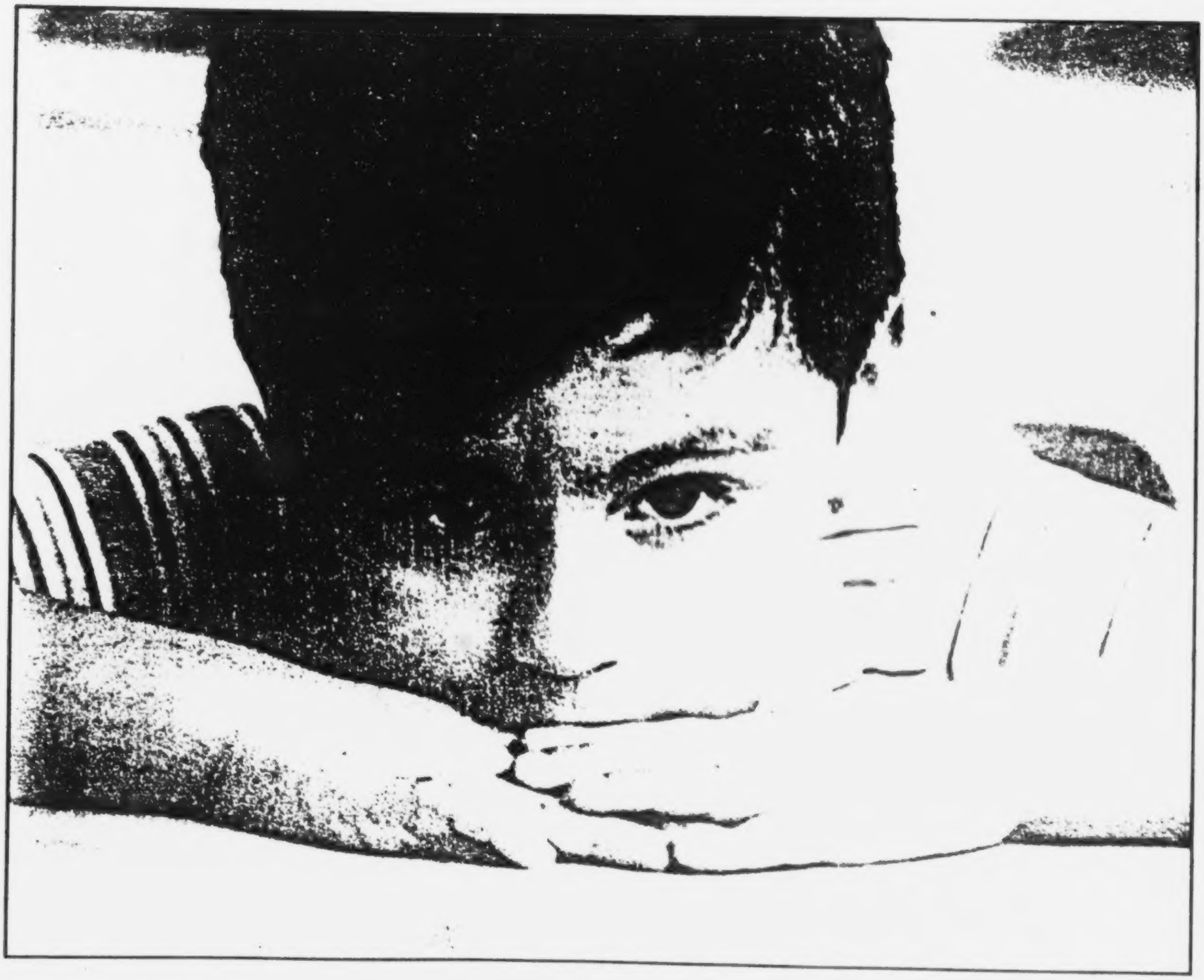
COMMENTS:

SPEECH LANGUAGE OUTPUT

not obs	rare	some	freq	
☐	☐	☐	☐	Produces speech or speech approximations
☐	☐	☐	☐	Occurrence of context-appropriate echolalia
☐	☐	☐	☐	Occurrence of context-inappropriate echolalia
☐	☐	☐	☐	Speech/echolalia serves communication functions
☐	☐	☐	☐	Occurrence of non-rote original speech

COMMENTS:

THREE



CURRICULUM DECISION GUIDELINES

Section Three

Curriculum Decision Guidelines

Charles A. Peck
Cheralyn Tomlinson
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Jeannette Newman
Connie Perillo
Richard Laitinen

SOME GENERAL CONSIDERATIONS FOR CURRICULUM DEVELOPMENT

It is currently fashionable to draw rather rigid distinctions between curricular approaches based on normal developmental sequences and those based on task analysis of common social environments (Brown, Branston, Hamre-Nietupski, Pumpian, Certo, & Grunewald, 1979). Developmental models rely on analysis and direct instruction of target behaviors. Rationale for this approach emphasizes the importance of relationships between skills, particularly insofar as they may be affected by (and themselves affect) patterns of underlying cognitive knowledge (Piaget, 1951). Task analytic models emphasize the limitations of our understanding of normal developmental sequences and processes, particularly with regard to the relevance of these to learning for people with severe developmental handicaps.

The SCCP model reflects a developmental orientation in assuming that there are important continuities between nonverbal, pre-symbolic social behavior and later symbolic communicative skills (Bruner, 1975). These are analyzed essentially in terms of similarities in how they function, that is, consistencies in how the student uses both nonverbal, pre-symbolic communicative behavior and formal language systems to accomplish the same sorts of purposes (Schuler & Goetz, 1981).

Conversely, the SCCP model also reflects some characteristics of the task analytic approach. These are reflected in an emphasis on teaching students skills which are immediately useful in their current environments. The priority here, however, is in assessing the usefulness or "functionality" of a particular skill from the student's point of view, rather than relying only on a general inventory of environmental performance demands as identified by a teacher, parent, or another adult. This bias is consistent with our belief that the best motivational strategy for assuring acquisition and maintenance of basic social and communication skills is to key instruction to real social situations in which the student is already trying to accomplish something (e.g., obtain objects, initiate or terminate social interaction, request assistance).

Normalization and Development

A common problem with developmentally oriented curricula for children and adolescents with severe handicaps is their reliance on activities and materials appropriate for infants or preschoolers. This practice can be extremely stigmatizing for older students or adult clients and should be avoided (Wolfensberger, 1972). It may take some thought, but most activities can be adapted to include materials which are age-appropriate for older students. For example, an activity focusing on joint action or "parallel play" skills might be adapted as a vocational activity, where clients work on assembly tasks and share work space, materials, etc. The sample curriculum activities in the SCCP materials provide suggestions for secondary or adult age-appropriate adaptations in some cases.

A tougher set of issues centers on whether the types of skills demonstrated by young children in the course of normal development should be taught at all to adolescents or adults who never acquired them. Wouldn't it be better to directly teach behaviors typical of competent adolescent or adult performance? In many cases this may be the best strategy. However, persistent problems encountered in maintaining and generalizing instructional gains for language and social interaction targets for students with severe handicaps suggest the importance of more closely relating instruction to the students' existing activities and goals. For example, communication instruction keyed to improving a student's effectiveness at achieving goals or outcomes he has already defined for himself (e.g., obtaining objects or attention; protesting an activity or food) seems more likely to be maintained and generalized than instruction aimed at teaching responses such as labeling pictures, practicing two-word constructions, etc., which may be irrelevant and poorly understood relative to their use in nontraining situations. This is the essential developmentalist argument for designing instruction to fit the student's current level of cognitive attainment. While many traditional developmental frameworks for addressing this issue may be limited or misleading, the SCCP model retains the notion that the student's "understanding" of instruction is important. The SCCP assessment procedures suggest methods for analyzing this through observing the student's behavior in natural social and communicative situations, and through assessment of specific conceptual abilities.

Social Integration: Curriculum Considerations

The SCCP model primarily represents a set of strategies for promoting social and communicative development. It is important to distinguish this aspect of programming from programatic strategies related to increasing social integration. By social integration we refer to regular contact between handicapped and nonhandicapped individuals in normalized social settings. We view social integration as an important and necessary program goal for students with autism and severe handicaps--on philosophical and ethical, as well as on educational grounds (Bricker, 1978). Thus, we suggest that activities which increase social integration be vigorously pursued for students at all levels of social competence.

At least two approaches to social integration are apparent. First, there has been considerable concern about the quantity and quality of social interactions which take place between handicapped students in integrated settings (Snyder, Apolloni, & Cooke, 1977). Consequently, much programatic effort has been expended toward improving interaction patterns of students in these settings (see Gaylord-Ross & Peck, 1983, for a comprehensive review).

A second approach to social integration has focused on increasing the participation of students with severe handicaps in as many integrated school and community environments as possible (Ford, Brown, Pumpian, Baumgart, Nisbet, Schroeder, & Loomis, 1984). This approach suggests that some "particular participation" in almost all environments is possible for severely handicapped students if sufficient support is provided.

Although these two programatic approaches to social integration are not antithetical, exclusive emphasis on one will likely reduce outcomes related to the other. That is, if balanced, reciprocal and unprompted interactions are the exclusive target of interventions, it is unlikely that there will be much opportunity for students to participate in the more complex interactions that typify the social performance of nonhandicapped students and adults. Conversely an exclusive focus on participation in "normalized" social interactions may not afford the student opportunities to practice carrying out and even directing social exchanges without adult prompts and feedback.

SCCP DECISION GUIDELINES

The SCCP Decision Guidelines outline a systematic approach to making curriculum decisions based on the assessment information you have collected. They are intended as a basic framework only--and as you become more familiar with the assessment instruments and their uses in curriculum planning you may devise your own decision rules. They will not likely be as formal as those presented here--but they will be much more flexible and finely "tuned" to specific students. Consider the present decision framework as a starting place which can be supplemented by your own knowledge and common sense.

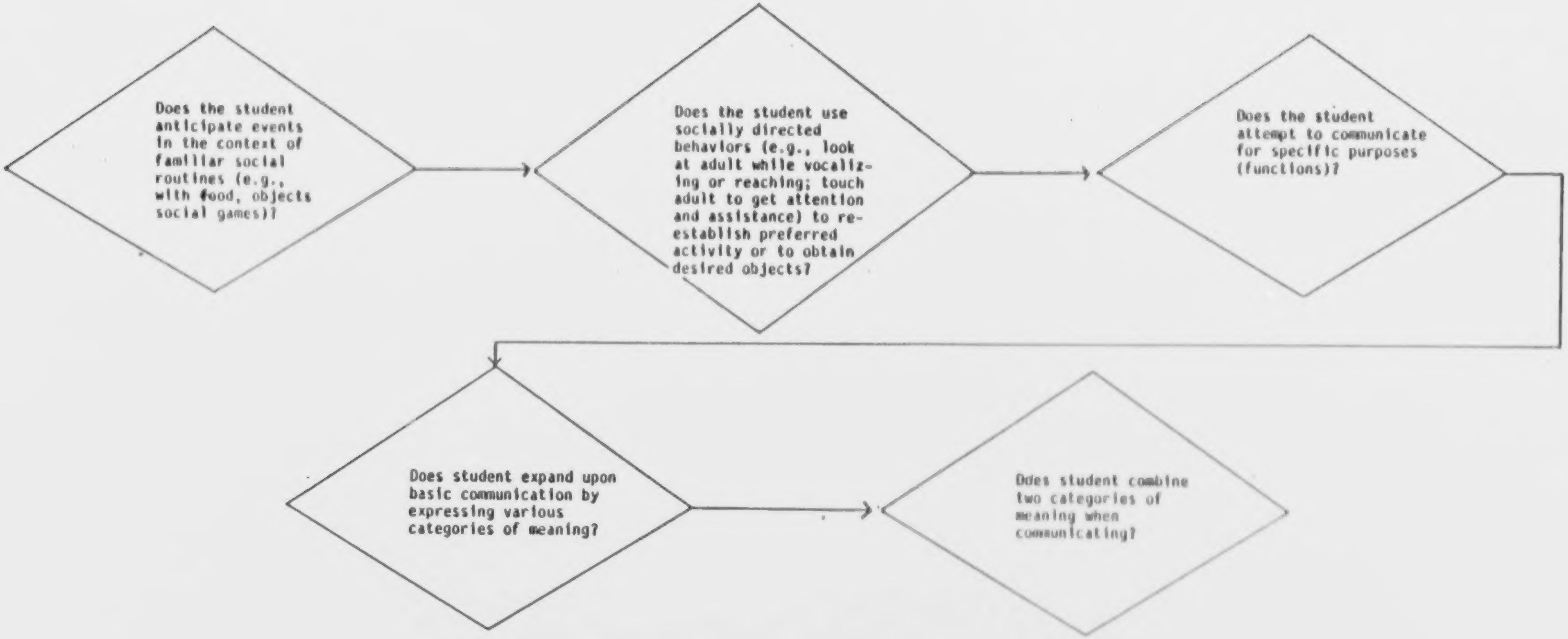
Communication and Social Decision Sequence

A schematic diagram for each of the Decision Guidelines appears in this section. It will help in following this discussion if you look them over at this point. (Pages 115 and 153.)

The decision guides are diagrammed as "flow charts" and each flow chart depicts five separate strands. These schematic diagrams give an overall picture of how each decision sequence flows from start to finish. You should use the schematic diagrams only to get a feel for the overall structure of the individual decision models. To make the decision about where to start the student, you should refer to the more detailed pages following each diagram.

Communication Decision Guidelines

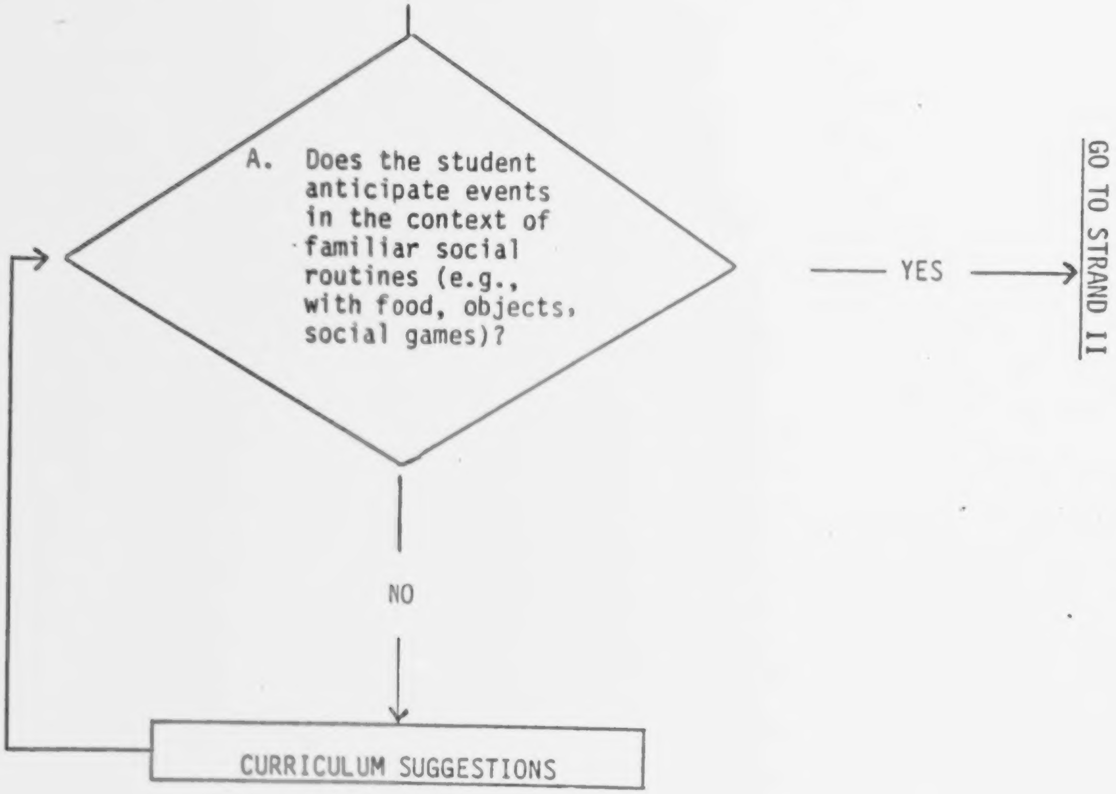
COMMUNICATION DECISION GUIDELINES


Does the student anticipate events in the context of familiar social routines (e.g., with food, objects social games)?
Does the student use socially directed behaviors (e.g., look at adult while vocalizing or reaching; touch adult to get attention and assistance) to re-establish preferred activity or to obtain desired objects?
Does the student attempt to communicate for specific purposes (functions)?
Does student expand upon basic communication by expressing various categories of meaning?
Ddes student combine two categories of meaning when communicating?

Communication Decision Guidelines

Elaboration and explanation of the decision points as they appear in the Communication Decision Guidelines are presented in the following section. For specific curriculum activities under each of the strands see Appendix A, Sample Curriculum Activities.

CURRICULUM STRAND I: ANTICIPATION OF ENVIRONMENTAL EVENTS


A. Does the student anticipate events in the context of familiar social routines (e.g., with food, objects, social games)?
YES
GO TO STRAND II
NO
CURRICULUM SUGGESTIONS

CURRICULUM STRAND I: ANTICIPATION OF ENVIRONMENTAL EVENTS

Goal: Anticipation of events in a regular routine.

A. Does the student anticipate events in the context of familiar social routines (e.g., with food, objects, social games)?

IF NO, THEN...

Set up situations where the student engages in shared activities with a partner who repeatedly stimulates visual, auditory, kinesthetic and perceptual motor channels. Look for anticipatory behaviors such as smiling, vocalization, body movement, reaching, gaze shift, or distress when next event in sequence is about to occur.

Also establish routines around emerging preferences in items/activities. Then disrupt those routines by tactics such as delaying the anticipated event, physically blocking the student from completing an activity, or placing an item out of reach. Wait for the student to produce a behavior that indicates anticipation of the next event.

Curriculum Suggestions

Activities in this strand should have an assessment function, as well as a teaching function, in the sense that you should experiment with activities, forms of stimulation, etc. to find out what the student reacts positively to, and then set up a regular pattern of events to which the student will respond consistently.

Work in contexts which include familiar and preferred events. Delaying the occurrence of a regular event will usually produce some behavior which shows the student is anticipating it. Specific suggestions follow:

1. Set up a repeated pattern of offering and accepting bites of food at lunch or snack time; then delay the next bite. Observe for evidence of surprise or concern in student.

For younger students:

2. Play "Where's the Kitty" by alternately hiding and showing toy under box or handkerchief. Observe whether the student vocalizes, looks toward toy, smiles or waves hands when toy is about to be re-presented.
3. Play a puppet game, establishing a verbal or nonverbal exchange; hesitate or pause during established routine.
4. Play "Pease Porridge Hot," or "One Potato-Two Potato," and other handclapping games; stop in the middle and observe student's reaction to change in routine.

For older students:

5. During a dodge ball game, or in simple ball rolling or ball bouncing exchanges, delay throwing, rolling, or bouncing the ball to the student.
6. Establish a routine taking turns with a simple videogame; then when the student's turn comes, delay giving him the videogame.

Strand I (continued)

7. Establish "give and take" sharing exchanges with items such as the earphones of a Sony Walkman, a baseball cap, or pushing a grocery cart in the store. Then disrupt the established routine, failing to give the student his turn.

Instructional Variations

1. Repeat game or food exchanges until student exhibits more consistent anticipation.

2. Vary the situation by using different objects or toys and see if student exhibits evidence of anticipation (changes in gaze or body orientation, etc.)

3. Set up activities so that student must increase the intensity of his response to continue routine (e.g., if anticipatory behavior is vocalization, then student must vocalize louder).

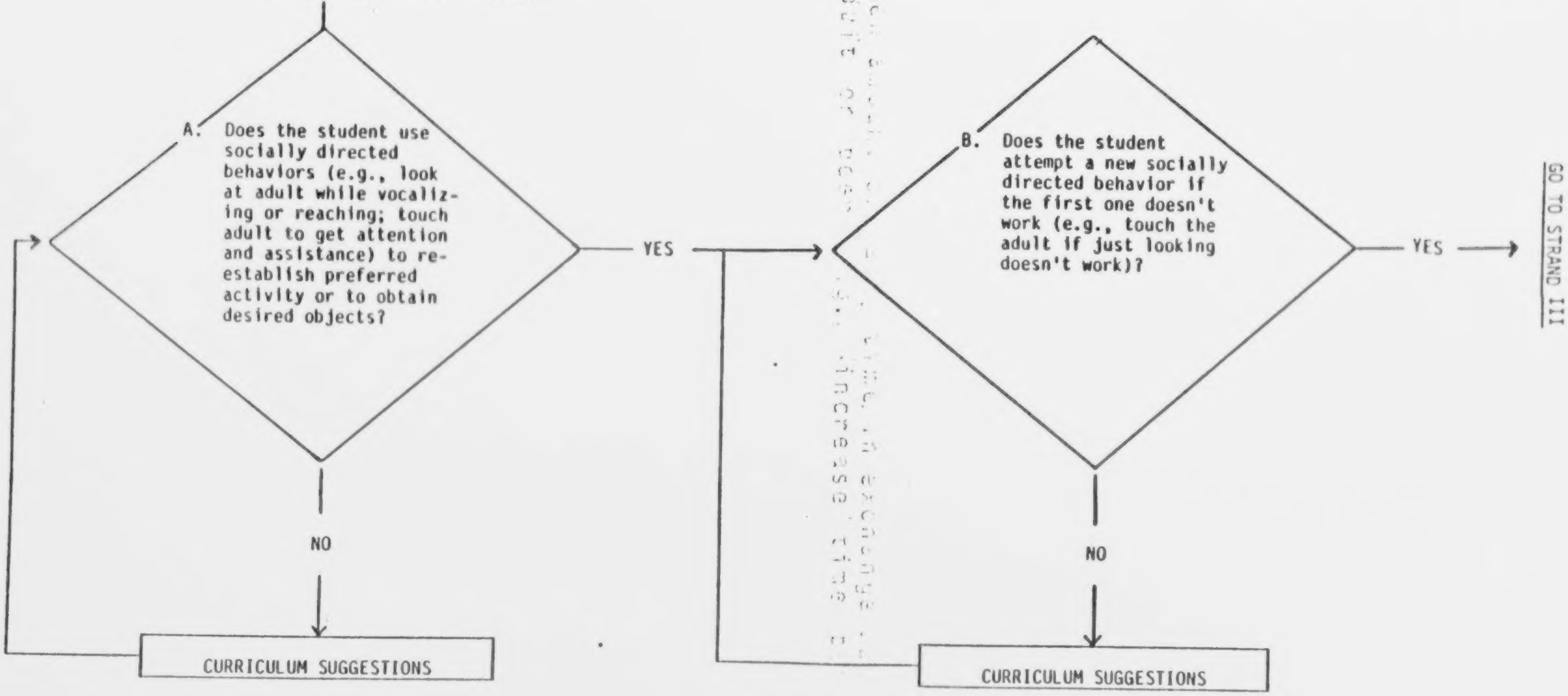
4. Lengthen amount of delay time in exchange between student and adult or peer (e.g., increase time between bubble blowing events or videogame turns, etc.) until the student changes the intensity, topography, or duration of her anticipatory responses.

Special Considerations for Strand I

1. You must determine what constitutes anticipatory behavior on an individual basis.

2. Work toward establishing anticipatory signal in social routines with various people, activities, and settings.

CURRICULUM STRAND II: USE OF SOCIALLY DIRECTED BEHAVIOR TO INFLUENCE THE ENVIRONMENT


A. Does the student use socially directed behaviors (e.g., look at adult while vocalizing or reaching; touch adult to get attention and assistance) to re-establish preferred activity or to obtain desired objects?
YES
NO
CURRICULUM SUGGESTIONS
B. Does the student attempt a new socially directed behavior if the first one doesn't work (e.g., touch the adult if just looking doesn't work)?
YES
GO TO STRAND III
NO
CURRICULUM SUGGESTIONS

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CURRICULUM STRAND II: USE OF SOCIALLY DIRECTED BEHAVIOR TO INFLUENCE THE ENVIRONMENT

Goal: To influence the environment through social means.

A. Does the student use socially directed behaviors (e.g., look at adult while vocalizing or reaching; touch adult to get attention and assistance) to reestablish preferred activity or to obtain desired objects?

IF NO, THEN . . .

Use or create a number of situations where the student shows that she wants various steps in the interaction to occur (likely situations include serving juice at snack, preparing to go outside, playing with a toy that produces a clear and easily anticipated event such as a jack-in-the-box). Some suggestions follow:

Curriculum Suggestions

1. As in Strand I activities, delay an event in the sequence that the student is anticipating until the student directs eye gaze, body orientation or touches toward you; then deliver the anticipated event.
2. Repeat established sequences until the student quickly and clearly uses one or more of the socially directed behaviors (e.g., moves your hand, gaze shifts, vocalizes toward you, etc.) to "prompt" you to continue the anticipated event sequence.

Strand II (continued)

3. Use existing situations, or create situations in which the student needs to use socially directed behaviors to prompt adult behavior related to:
    a. repetitive sequences involving food (e.g., cutting up food one piece at a time and handing it to the student; serving food in a group situation)

    b. repetitive sequences involving objects (e.g., wind up toys, jack-in-the-box, blowing bubbles, manipulating video game, etc.)

    c. repetitive social games (e.g., peek-a-boo, patty-cake, imitation games, tickling games).

4. For students who are not social, but who have distinct object preferences, carry out social games involving turntaking and imitation using preferred objects (e.g., if the student likes objects that provide auditory stimulation, the adult might set up sequences where sets of objects are introduced, and novel ways of using them to make new sounds demonstrated. The adult can then delay in presenting the next object, and also delay in demonstrating it, to produce student attempts to prompt resumption of the sequence).

5. Expand established activities across situations and adults until the student consistently and clearly uses socially directed behaviors to produce desired events in a variety of familiar situations.

B. Does the student attempt a new socially directed behavior if the first one doesn't work (e.g., touch the adult if just looking doesn't work)?

Strand II (continued)

IF NO, THEN . . .

Work with the student in situations where some socially directed behavior is already evident, as in the curriculum contexts described under Strand II, A.

Curriculum Suggestions

The central notion here is that of elementary "repair" or problem solving, in the sense that the student tries various means to achieve communicative goals if not initially successful. This ability for communicative repair builds flexibility into the student's social system. Suggestions follow:

1. Conduct a routine sequence as usual, but delay the anticipated event even when the student engages in her usual social behavior. Wait until the student tries another means of prompting you to continue the sequence (e.g., touching you, vocalizing "at" you, moving closer, etc.); then deliver the anticipated event. If the student shows signs of becoming agitated or upset, do not let this progress. Go ahead and deliver the event, or prompt another socially directed behavior and then deliver the event.

2. When the student consistently uses the second socially directed behavior, then intermittently respond to either one or both of the student's socially directed behaviors in this situation until the student shows flexibility in her use of either behavior as needed to get your response.

3. Expand this activity across situations and adults until the student consistently and flexibly uses two or more socially directed behaviors to prompt adults to provide anticipated and preferred events in familiar situations.

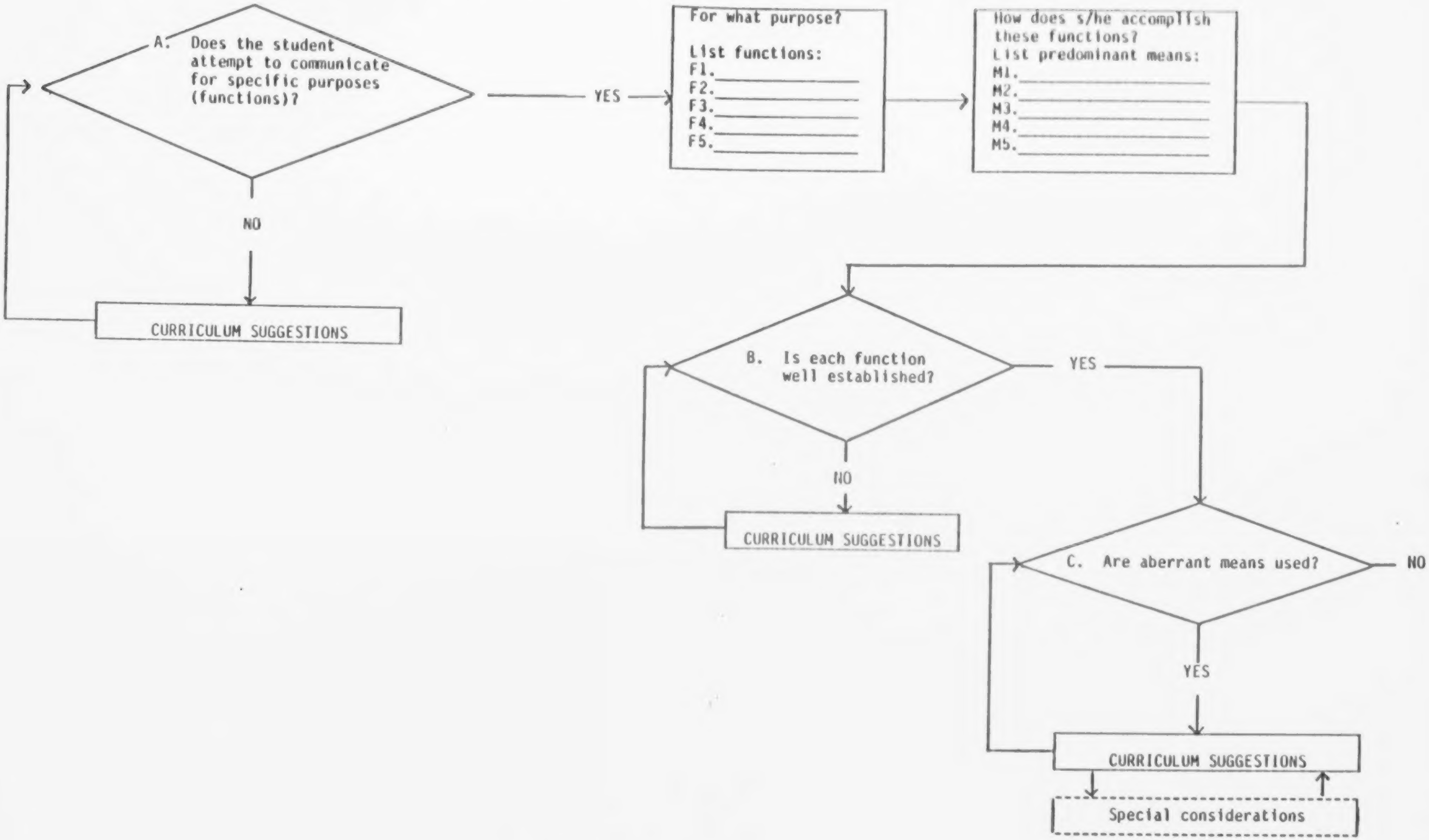
Strand II (continued)

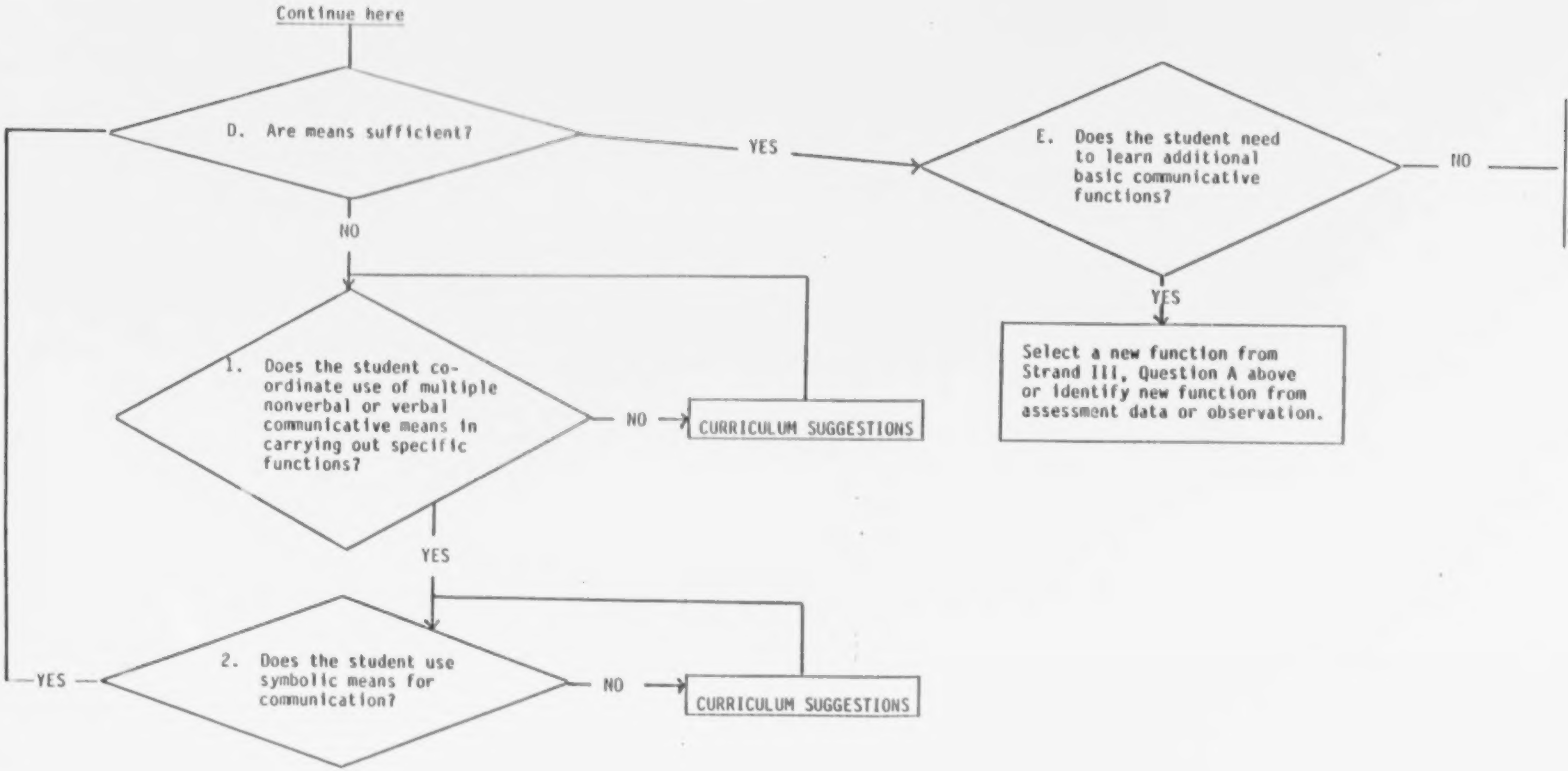
Special Considerations for Strand II

1. Aberrant behavior: If you know the student is likely to engage in aggressive, self-injurious, or other unacceptable behavior *do not* delay anticipated events long enough to generate this behavior. Rather, briefly delay the event, then quickly prompt another appropriate socially directed behavior (e.g., touch or turn the student's head toward you, move the desired object across your line of gaze to the student) and immediately deliver the anticipated event.

2. If the student begins to vocalize or whine at the same time as she engages in a nonverbal social behavior (e.g., gaze shift, touch) when an event is delayed, this is probably more intentional than simple "reactive" crying. The adult must distinguish between undesirable behavior and intentional communicative behavior in order to clearly respond to socially directed vocalizations while extinguishing or redirecting "reactive" responses which may lead to aberrant behavior.

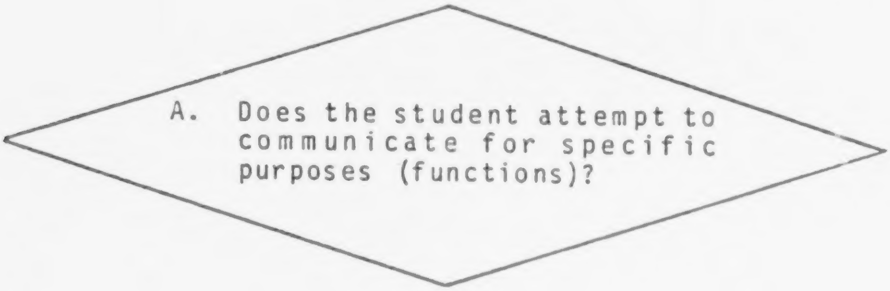
CURRICULUM STRAND III: COMMUNICATION FOR SPECIFIC FUNCTIONS


A. Does the student attempt to communicate for specific purposes (functions)?
YES
NO
CURRICULUM SUGGESTIONS
For what purpose?
List functions:
F1.
F2.
F3.
F4.
F5.
How does s/he accomplish these functions?
List predominant means:
M1.
M2.
M3.
M4.
M5.
B. Is each function well established?
YES
NO
CURRICULUM SUGGESTIONS
C. Are aberrant means used?
NO
YES
CURRICULUM SUGGESTIONS
Special considerations


Continue here
D. Are means sufficient?
YES
NO
E. Does the student need to learn additional basic communicative functions?
NO
GO TO STRAND IV
YES
Select a new function from Strand III, Question A above or identify new function from assessment data or observation.
1. Does the student coordinate use of multiple nonverbal or verbal communicative means in carrying out specific functions?
NO
CURRICULUM SUGGESTIONS
YES
2. Does the student use symbolic means for communication?
NO
CURRICULUM SUGGESTIONS
YES

CURRICULUM STRAND III: COMMUNICATION FOR SPECIFIC FUNCTIONS

Goal: To establish functional communication skills.



A. Does the student attempt to communicate for specific purposes (functions)?

For what purpose?

List functions:

F1. ______________________________

F2. ______________________________

F3. ______________________________

F4. ______________________________

F5. ______________________________

How does she accomplish these functions?

List predominant means:

M1. ______________________________

M2. ______________________________

M3. ______________________________

M4. ______________________________

M5. ______________________________

GO TO QUESTION B.

IF NO, THEN . . .

Teach communicative functions related to student's preferences for people, food, or objects.

Curriculum Suggestions

1. Teach requests for food or objects by creating situations or by focusing on naturally occurring situations in which the student is in view of the object or food, but needs adult assistance to obtain it. For example, in free play time, the teacher might put a favorite game up on a shelf. If the student doesn't notice it or understand how to get the teacher to help, a peer might model a request behavior (if the student is imitative) or the teacher might simply get the game down for the student the first few sessions. Then the teacher can withhold assistance, waiting for the student to initiate some attempt to get the teacher's help, e.g., gaze shifts, pointing, signing, verbalization, etc. This response should be strengthened by repeatedly exposing the student to this situation.

2. Teach protesting by creating situations or training in natural situations where the student is presented with undesired activities, food, or objects. For example:

    a. Present the student with a choice of objects or foods (one desired, one undesired) and offer him the less desired object. When he shows some behavior indicative of distress or protest, for example by pushing away, vocalizing, or turning his head away, withdraw the undesired object and replace it with the desired one. (See Special Considerations 2 at the end of this section describing Strand III Curriculum.)

    b. Respond to existing student attempts to protest activities, foods, or use of objects where this doesn't interfere with ongoing behavior management goals.

    c. Present the student with a task which he does not particularly enjoy. When the student shows signs of wishing to terminate the task, prompt or model an appropriate communicative behavior (nonverbal, sign, or verbal) to indicate protest, and stop the task.

3. Teach commenting/declaring by engaging in joint activities with student--activities which reflect her natural play activities, object preferences, etc., and which set the occasion for the student to call your attention to objects.

Strand III (continued)

For example:

a. Set up a playtime in which you follow the student's activities, using imitation and elaboration of the student's behavior as your principal means of initiating and maintaining the interaction. Call the student's attention to objects by giving, pointing, or showing them to the student. Respond to any student behaviors of this type with enthusiasm and imitation of that behavior.

b. Whenever possible during the day, be attentive and highly responsive to the student's interests, especially any attempts to get you involved in his activity through giving, pointing, showing, or verbally commenting on objects, events, or activities.

B. Is each function well established in the sense that other persons in the environment respond to the student's attempts to communicate for specific purposes?

IF NO, THEN . . .

Curriculum Suggestions

1. Increase environmental responsiveness to existing attempts to carry out target function as follows:

   a. Teachers and aides should be alert to student's communicative attempts in certain situations and should respond to them; e.g., adults should notice and respond to student's gaze shift and vocalization as requests for toys during playtime.

   b. Teach peers to prompt and respond to the student's communicative attempts (or arrange for regular contact with peers who are more likely to recognize and respond to the student's communication), e.g., for a student who is just learning to initiate social interaction, arrange for him to play with peers who will respond when he offers, gives, or points to objects as a means of requesting interaction.

2. Construct repeated but "natural" situations where the student will have to engage in communicative behaviors to carry out specific functions. For example, to strengthen the request for assistance function, arrange for many of the student's favorite objects or food to be available only through getting an adult's (or peer's) help to obtain them.

C. Are aberrant means used to accomplish communicative purposes?

IF YES, THEN . . .

Curriculum Suggestions

Teach acceptable communicative means for carrying out this function.

a. Select a new replacement communication behavior that is at the appropriate nonverbal or symbolic level for the student.

b. Put the student in repeated situations where she is likely to express the relevant functions (e.g., nonpreferred tasks for protest, proximity to favorite foods which are out of reach for requests).

c. Before the student begins to engage in the undesirable communicative behavior, model or prompt the student to engage in the target behavior. Reward the student with the desired event (e.g., task removal, desired food).

d. When the student consistently demonstrates the desired communicative behavior in these "training sessions," require its performance across all other situations, using the same prompting strategies if necessary.

Strand III (continued)

D. Are means sufficient to accomplish communicative purposes for the student?

IF NO, THEN . . .

Decide on the areas of insuffiency by asking the following questions:

1. Does the student coordinate use of multiple nonverbal and/or verbal communicative means in carrying out specific functions?

   If no, then . . .

   Curriculum Suggestions

   Means can be considered sufficient if they accomplish the student's objectives consistently across people and situations, and if they are appropriate within the context.

   Effective social/communicative behavior generally involves the use of coordinated means to accomplish specific functions. For example, a student's requesting behavior might involve directing his gaze from another person to an object, and, at the same time, vocalizing, and pointing to that object. When the student uses multiple communicative means and coordinates their use effectively, he is much more likely to communicate a request clearly enough so that it will be understood by others than if he uses a single nonverbal or verbal means, such as vocalizing. Specific suggestions follow:

Strand III (continued)

1. Teach a second nonverbal communicative behavior if the student does not already demonstrate at least two consistently, for example:

   a. touch plus gaze shift
   b. vocalization plus gaze shift
   c. pointing plus vocalization
   d. gaze shifts plus pointing

2. When both behaviors are consistently used on most occasions, delay the event until the student uses both simultaneously, prompting if necessary. For example, if the student is pointing, wait until he turns to look at you, or simultaneously vocalizes, to respond.

3. Expand the student's repertoire of nonverbal and verbal communicative means until she can flexibly use a number of appropriate and effective combinations depending on the context. For example:

   a. wants to go outside: proximity, pointing, vocalization
   b. wants toy: points, vocalizes, gaze shift
   c. wants to interact/play: proximity, touch, offers object
   d. protesting disliked food: vocalizes, turns head, signs "all done"

2. Does the student use formal symbolic means like verbal speech or manual signs for communication?

If no, then . . .

Curriculum Suggestions

Certainly the use of symbolic, conventional means for communication should be a goal for capable students. While some students may be able to learn functional sign language or speech, other students may be unlikely to learn such communication systems but may be able to learn conventional

Strand III (continued)

such as pointing or gesturing. Programming suggestions follow:

1. Select appropriate communication medium (see decision guidelines on sign, verbal, written, communication board options).
2. Conduct receptive identification training for items the student is used to requesting (e.g., juice, cookie).
3. Use modeling strategy to add new symbolic communicative behavior to existing nonverbal means in familiar functional situations. For example, delay delivering juice requested via usual nonverbal means and model verbal label "juice", then deliver the juice contingent upon approximation of the model.
4. Probe for generalization (and train as necessary) to increasingly dissimilar objects or actions that are of the same class (e.g., different kinds of cups).

E. Does the student need to learn additional basic communicative functions?

IF YES, THEN . . .

Select a new function from Strand III, Question A above (e.g., F2) or identify new function from assessment data or observation.

Instructional Variations

1. Identify additional contexts or situations during the day that require the student to express the target communicative function. If none exist, create them!

Strand III (continued)

but may be able to learn conventional signals such as pointing or gesturing. Programming suggestions follow:

1. Select appropriate communication medium (see decision guidelines on sign, verbal, written, communication board options).
2. Conduct receptive identification training for items the student is used to requesting (e.g., juice, cookie).
3. Use modeling strategy to add new symbolic communicative behavior to existing nonverbal means in familiar functional situations. For example, delay delivering juice requested via usual nonverbal means and model verbal label "juice", then deliver the juice contingent upon approximation of the model.
4. Probe for generalization (and train as necessary) to increasingly dissimilar objects or actions that are of the same class (e.g., different kinds of cups).

E. Does the student need to learn additional basic communicative functions?

IF YES, THEN . . .

Select a new function from Strand III, Question A above (e.g., F2) or identify new function from assessment data or observation.

Instructional Variations

1. Identify additional contexts or situations during the day that require the student to express the target communicative function. If none exist, create them!

Strand III (continued)

2. If the student expresses some communicative behavior as he recognizes its function in a new situation, respond immediately; work on the form of means later. If the student doesn't attempt to communicate, deliver the event anyway the first few times to develop an expected routine, then delay the anticipated event. Directly prompt communicative behavior only as a last resort.

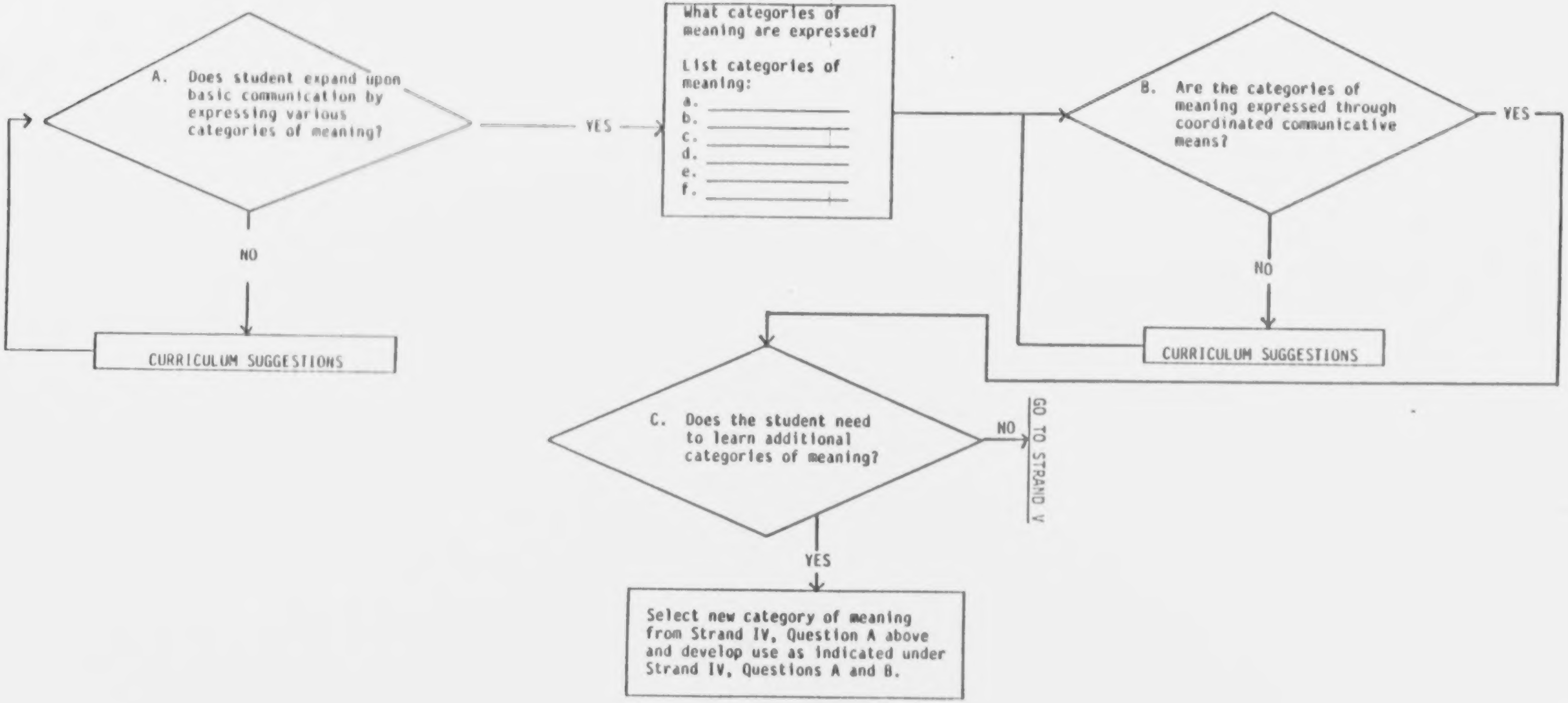
3. When the student consistently demonstrates the target communicative function in a new situation, expand to yet another one, continuing this process until the student immediately recognizes and uses the communicative function in new situations.

Special Considerations for Strand III

1. Aberrant behavior: if the student shows signs of engaging in aggressive or self-injurious behavior, quickly prompt an appropriate behavior, ensure that the student engages in it or an approximation, and then provide the appropriate consequence for the situation (i.e., object, food, or task termination depending on the student's communicative purpose).

2. Reinforcing task avoidance: obviously, it will not be possible or appropriate to allow the student to terminate any task at will or to successfully request any object or food desired at any time. However, providing the student with some experience in dealing with situations in which such requests and protests are successful is critical to teaching the student appropriate means for meeting her needs in those situations instead of a) becoming completely passive or b) engaging in aberrant behavior.

CURRICULUM STRAND IV: EXPANSION OF COMMUNICATIVE FUNCTIONS


A. Does student expand upon basic communication by expressing various categories of meaning?
YES
NO
CURRICULUM SUGGESTIONS
What categories of meaning are expressed?
List categories of meaning:
a. ______
b. ______
c. ______
d. ______
e. ______
f. ______
B. Are the categories of meaning expressed through coordinated communicative means?
YES
NO
CURRICULUM SUGGESTIONS
C. Does the student need to learn additional categories of meaning?
NO
GO TO STRAND V
YES
Select new category of meaning from Strand IV, Question A above and develop use as indicated under Strand IV, Questions A and B.

Strand IV (continued)

1. agents (utterances that identify the instigator of an action or change of state).
    a. "Michael" referring to the person that the student hears playing in another room
    b. student says "Tiger" to indicate that his cat broke the dish, while looking at a broken dish on the floor
2. actions (utterances which indicate movement) Examples: run, jump, go
3. labels (utterances which name people, places, or things) Examples:
    a. general naming: "ball," "car," "dog"
    b. specific naming: names of people, pet names
4. performatives (utterances that co-occur with a child's actions) Examples:
    a. "row, row" during Row Your Boat game
    b. "bye, bye" while student waves good-bye
5. indicatives (utterances that call attention to objects) Examples:
    a. "kitty" while pointing to a cat
    b. "Bobby" while gesturing toward a person outside the classroom window (addressed to teacher in classroom)
6. locatives (utterances which indicate location or spatial orientation) Examples:
    a. student places doll on table and says "table"
    b. student removes ball from lap, puts it on the floor, and says "down"

Individual categories of meaning can be taught within the context of daily classroom activities. For example, the action category could be targeted within perceptual-motor or recess activities. The student's ability to use a particular piece of equipment might be made contingent upon correct use of an action label when she is asked "What do you want to do?" To develop the locative category, the student might be required to indicate

Strand IV (continued)

by a pointing response where she wants the teacher to put her snack item; e.g., on the table in the classroom or on the table outside.

B. Are the categories of meaning expressed through coordinated communicative means?

IF NO, THEN . . .

Teach use of coordinated means to express categories of meaning.

Curriculum Suggestions

The student's expression of particular communicative meanings will be more effective when he combines and coordinates the use of verbal as well as nonverbal means. For example, a student might respond "Sally" when asked by a peer "Where did you put your shoes?" It may not be clear to the peer that the student even understood the question. However, if the student responds "Sally," gestures toward Sally across the room, and looks back and forth from Sally to the peer, the peer clearly understands the student's indication that a particular person, Sally, has the shoes.

The student should learn to use the various categories of semantic meaning in a variety of situations and contexts. Training should occur in incidental situations throughout the day. If possible for a particular student, the overall objective should be to facilitate his production of new forms or instances of these categories of meaning so that he can produce them appropriately in novel contexts. Specific suggestions follow:

1. Facilitate coordination of verbal and nonverbal means to express intended meanings. For example, during an activity such as cooking time, establish a routine where student learns to complete all steps in a recipe independently. Then have student direct another student or younger peer through steps needed to complete that recipe. The teacher can initially model appropriate verbal and nonverbal means for student to direct younger peer. Following are some examples:

    a. indicatives
    "that spoon" (while pointing to the spoon).
    b. locatives
    "bowl" (while holding bowl up for younger peer to indicate where the flour goes).
    c. action
    "stir" (while giving the younger peer the spoon and looking from the spoon to the bowl).

2. Using contexts in which established categories of meaning are expressed by student (such as agent and action categories) focus on developing student's coordination of intentional signals or means to express such meanings. For example, when student describes the action of another student riding a bike by saying "ride," the teacher might ask the student "What?" to facilitate a repair or revision strategy in which the student is required to point to the bike rider and look from the teacher to the bike, in addition to verbalizing "ride."

3. During an activity such as recess, disrupt student's expectations when she requests an object or food item that she usually receives by giving her the wrong item. Model a communicative repair strategy to assist her in requesting the appropriate item. For example, when she expects a ball, give her a book instead. Have her tell you "no" upon receiving the book, and repeat or modify her verbal request, in addition to pointing to the ball.

    In this example, the student is given an opportunity to express the indicative category of meaning, in addition to expressing protest and request functions.

Strand IV (continued)

Instructional Variations

1. Once the student successfully understands and uses labels, indicatives, action words, etc., in a particular training context, introduce novel objects or activities with some similar tasks characteristics to encourage generalized use of the student's new communication skills.
2. Require student to use coordinated means to express categories of meaning in other contexts during the school day, e.g., snack time, art time, and recess, in addition to cooking time.
3. Teach student to coordinate means to express categories of meaning across both social and object-related contexts.

Special Considerations for Strand IV

1. The categories of meaning listed in this strand have not been presented in a particular hierarchy or developmental sequence. As indicated above, selection of a specific category should be based on student's nonverbal knowledge and environmental needs.
2. Include development of comprehension of the categories of meaning by incorporating activities which require the student to respond to labels, indicatives, action words, etc. (e.g., teacher directs student during cooking, snack, and lunch activities to carry out actions such as "stir," "pour," and "cut").
3. Social routines as well as object-related routines can be disrupted to develop socially-appropriate behaviors. For example, if student greets teacher in a routine manner in the morning, teacher should respond differently or not at all so that the student must repeat or revise her greeting to get a response.

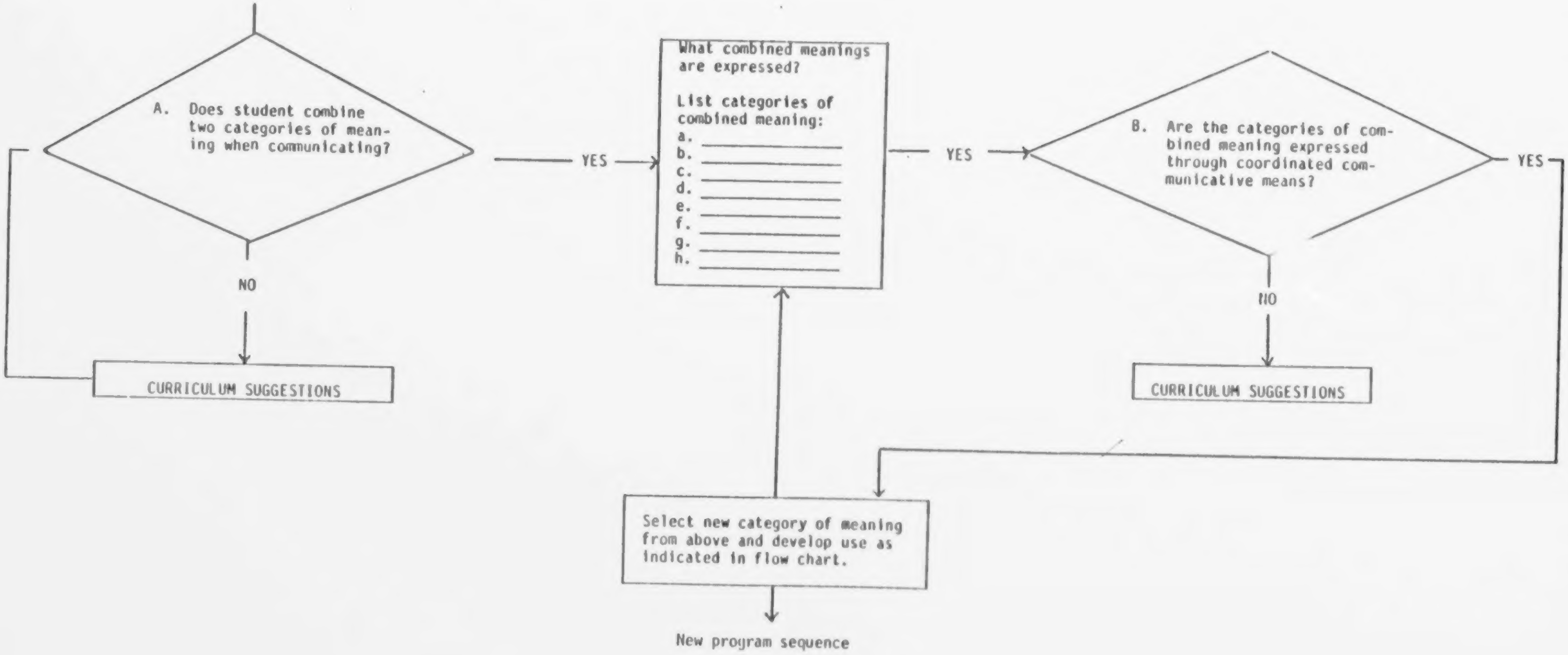
C. Does the student need to learn additional categories of meaning?

Strand IV (continued)

IF YES, THEN...

Select new category of meaning from Strand IV, A above and develop use as indicated under Strand IV, A and B.

CURRICULUM STRAND V: COMBINED MEANINGS TO COMMUNICATE


A. Does student combine two categories of meaning when communicating?
YES
NO
CURRICULUM SUGGESTIONS
What combined meanings are expressed?
List categories of combined meaning:
a.
b.
c.
d.
e.
f.
g.
h.
YES
B. Are the categories of combined meaning expressed through coordinated communicative means?
YES
NO
CURRICULUM SUGGESTIONS
Select new category of meaning from above and develop use as indicated in flow chart.
New program sequence

CURRICULUM STRAND V: COMBINED MEANINGS TO COMMUNICATE

Goal: To communicate combined meanings through verbal/nonverbal expressions.

A. Does student combine two categories of meaning when communicating?

IF YES, THEN...

What combined meanings are expressed?

List categories of combined meaning:

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

e. ______________________________

f. ______________________________

g. ______________________________

h. ______________________________

GO TO QUESTION B.

IF NO, THEN...

Curriculum Suggestions

Categories of meaning may not be expressed in isolation by the student, but instead they may be combined in a variety of ways. Some examples include agent-object utterances (as in "John shoe" to indicate that John has the shoe), action-object utterances (as in "pull wagon" to direct a peer during recess play) utterances which express attribution (as in "big ice cream" to request a large serving of ice cream), utterances which express rejection (as in "no more juice"), and questions (as in "who come?" to ask about a visitor). The student's ability to express combined semantic meanings suggests the beginnings of some "generative" knowledge of language, or the ability to create novel utterances appropriate to particular contexts.

Teach the student to combine categories of meaning including the following combinations. Selection of one of the following as a teaching objective should be based on the student's cognitive understanding and considerations regarding what is needed for improved social/communicative functioning relative to environmental demands. Cognitive understanding might be indicated by student recognition of these combined categories of meaning on a nonverbal level.

Strand V (continued)

1. agent-object
   Examples:
   a. "Amy ball" (looking at the ball held by Amy)
   b. "Doggie bone" (looking at the dog and gesturing toward the bone)

2. agent-action
   Examples:
   a. "Johnny push" (pointing to the truck, while alternately looking from the truck to Johnny)
   b. "Teacher write" (commenting on what the teacher is doing)

3. action-object
   Examples:
   a. "push truck" (while pushing a toy truck)
   b. "kick ball" (addressed to another child as a directive)

4. attribution
   Examples:
   a. "red box"
   b. "little flower"

5. non-existence
   Examples:
   a. "all gone cake"
   b. "no juice"

6. rejection
   Examples:
   a. "no more"
   b. "all done".

7. denial
   Examples:
   a. "not tree"
   b. "all done"

8. question
   Examples:
   a. "Where Bill?"
   b. "What see?"

9. recurrence
   Examples:
   a. "more cookies"
   b. "run more"

Combined categories of meaning can be taught within the context of daily classroom activities. For example, the agent-action category could be targeted within free play time. While the student plays with toy vehicles and toy people, agent-object utterances could be modeled for the student to imitate, such as "man drives" or "boy rides."

To develop the use of attribution, circle time could be the

Strand V (continued)

context for a grab bag activity in which the student looks in the bag and tells the teacher she wants the "big car" when the teacher asks "Which one do you want?" Some distractor items should be included in the bag, such as a little car, so that the student must use the targeted attributes to gain access to particular objects. This task might be modified to develop comprehension of attributes first so that the student responds to the adult instruction; e.g., "Give the red box to Sam."

B. Are the categories of combined meaning expressed through coordinated communicative means?

IF NO, THEN...

Teach use of coordinated means to express combined categories of meaning.

Curriculum Suggestions

The expression of combined semantic meanings is more communicatively effective when the student coordinates the use of verbal as well as nonverbal means. If a student says "Susie cup" providing no other verbal or nonverbal information, it may be unclear whether he is stating that Susie has a cup or Susie wants a cup or that he wants Susie's cup, but if the student says "Susie cup," reaching toward the cup in Susie's hand and looking from Susie to the teacher, the message becomes clear that he wants the cup held by Susie. Thus, students who have learned to combine semantic meanings can improve their communicative effectiveness by learning to coordinate nonverbal behaviors with their use of verbal utterances.

The student should learn to use combined categories of meaning in a variety of situations and contexts. Thus, training should occur in incidental situations throughout the day. If possible for a particular student, the overall objective should be to facilitate generative use (i.e., new and novel forms) of these combined categories of meaning, so they can be produced appropriately and creatively in novel contexts.

1. Set up situations in which the student must direct an adult or older peer tutor in order for a game or activity to continue. Following are examples of such instructions during perceptual-motor or recess activities:

    a. agent-action
    ("Ellen pour" while pointing to teapot and looking from Ellen to the teapot and cup)

    b. attribution
    ("big ball" while gesturing towards two balls to direct the adult or peer tutor to get the big one)

2. As in Strand IV, disrupt student's expectations within social and object-related routines. Model communicative repair strategies for her to obtain the desired results. For example, when the student receives a bowl instead of a requested spoon during a cooking activity, she can modify or revise her request, coordinating verbal and nonverbal means, and using combined categories of meaning; e.g., "not bowl" (denial-object), "where spoon?" (question), or "I stir" while pointing to the spoon (agent-action).

Strand V (continued)

Instructional Variations

1. Once the student successfully understands and uses specific combined categories of meaning in a particular training context, introduce novel objects or activities with some similar task characteristics to encourage generalized use of the student's new communication skills.

2. Require student to use coordinated means to express combined categories of meaning in other contexts during the school day; e.g., perceptual-motor time, lunch time, and circle time in addition to cooking time.

3. Teach student to coordinate means to express combined categories of meaning across both social and object-related contexts.

Special Considerations for Strand V

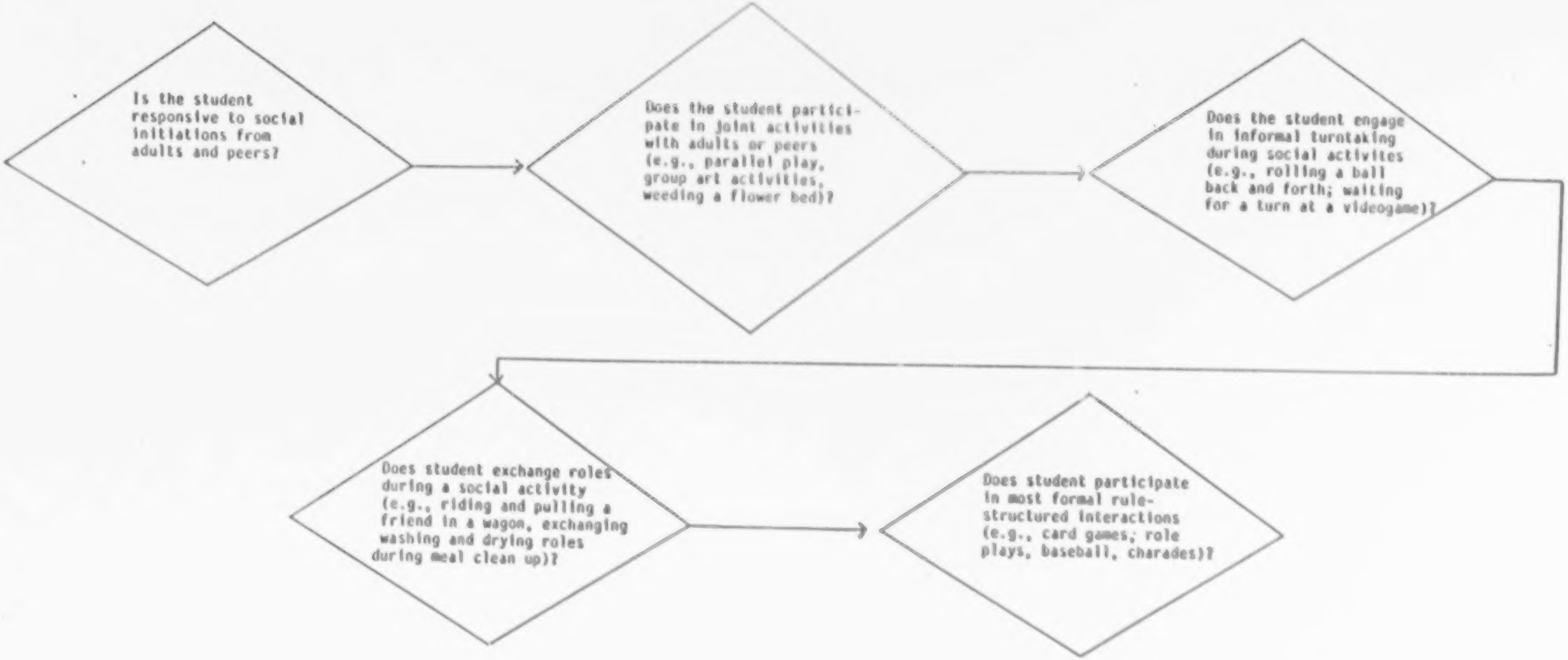
1. The combined categories of meaning listed in this strand do not represent a particular hierarchy or developmental sequence. As indicated above, selection of a specific combined category should be based on student's nonverbal knowledge and environmental needs.

2. As in Strand IV, develop comprehension of combined categories of meaning by requiring the student to respond to instructions incorporating combined categories of meaning such as agent-action, action-object, recurrence, etc. For example, teacher suggests that child make "dolly eat" or "doggie jump."

3. Verbally describe what student is doing while he is doing it, using combined categories of meaning to develop comment or declarative function of language. Later, require student to verbalize what he is doing while carrying out particular activities.

Social Decision Guidelines

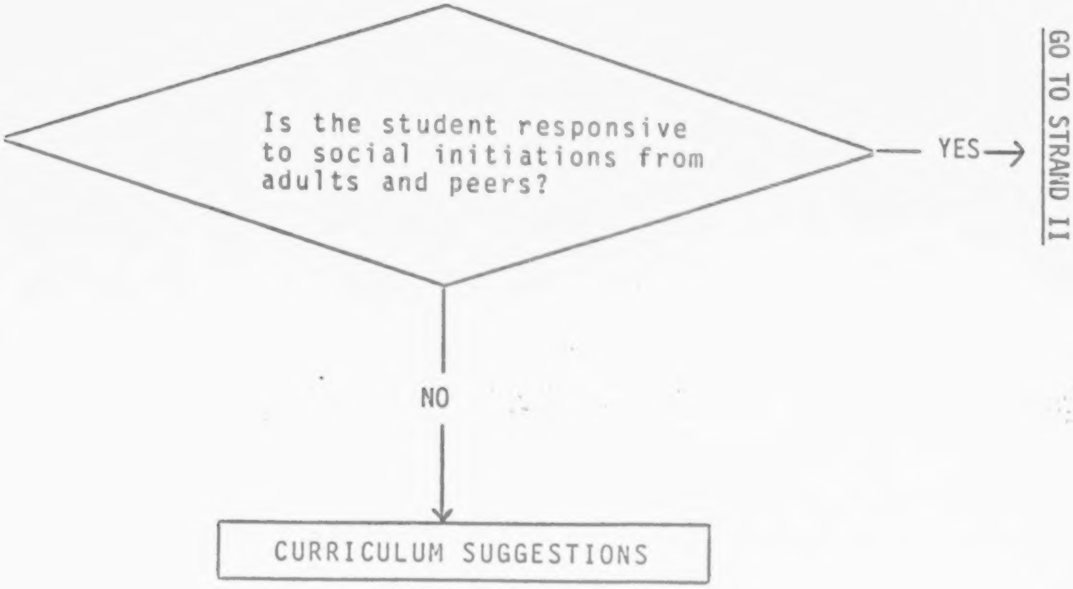
SOCIAL DECISION GUIDELINES


Is the student responsive to social initiations from adults and peers?
Does the student participate in joint activities with adults or peers (e.g., parallel play, group art activities, weeding a flower bed)?
Does the student engage in informal turntaking during social activites (e.g., rolling a ball back and forth; waiting for a turn at a videogame)?
Does student exchange roles during a social activity (e.g., riding and pulling a friend in a wagon, exchanging washing and drying roles during meal clean up)?
Does student participate in most formal rule-structured interactions (e.g., card games, role plays, baseball, charades)?

Social Interaction Decision Guidelines

Elaboration and explanation of the decision points as they appear in the Social Decision Guidelines are presented in the following section. For specific curriculum activities under each of the strands, see Appendix B, Sample Curriculum Activities.

SOCIAL STRAND I: RESPONSIVE


Is the student responsive to social initiations from adults and peers?
YES
GO TO STRAND II
NO
CURRICULUM SUGGESTIONS

SOCIAL STRAND I: RESPONSIVE

Is the student responsive
to social initiations from
adults and peers?

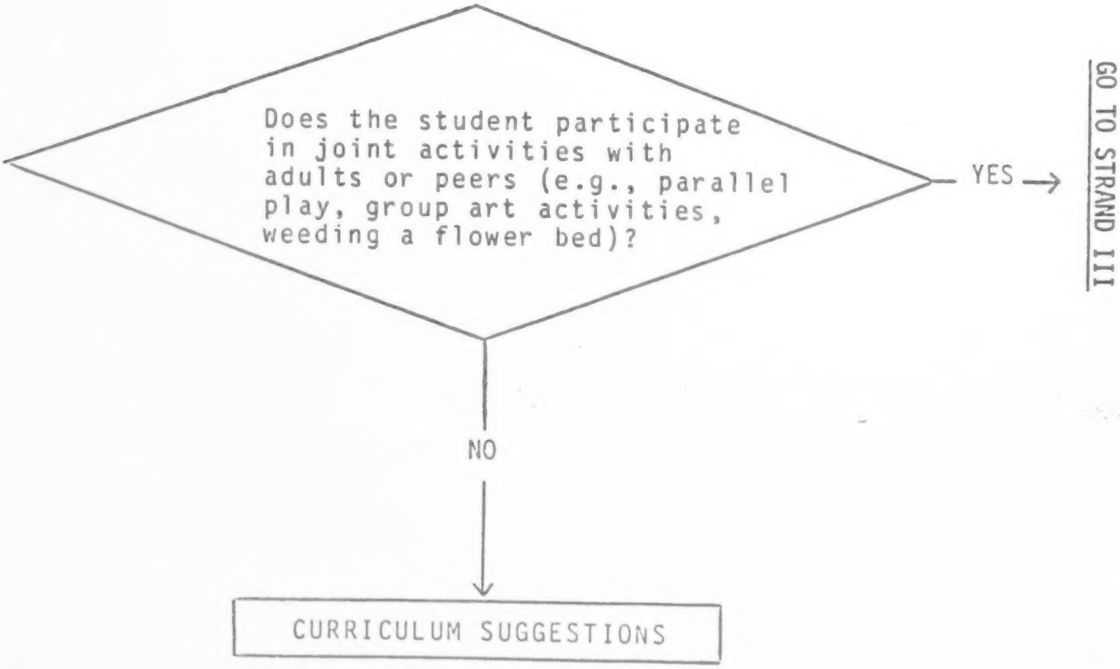
IF NO, THEN

In this Strand you are working to get the student to show consistent response to social initiations, even if she does not initiate, elaborate, or continue interactions. The burden of establishing and maintaining social interaction is on the adult or peer; the student is not expected to "direct" the interaction. Intervention strategies in this Strand focus on making social interaction as motivating as possible for the student. This is accomplished by a) using the student's preferred activities as the context for interaction, b) setting up interaction exchanges which involve a clear and desirable consequence for the student, and c) keeping the interactions simple and nonverbal.

Curriculum Suggestions:

1. Use student-directed play to increase student's willingness to participate in social exchanges.
2. Set up situations where there is a natural "pay-off" for responding to adult or peer initiations, e.g., receiving food, objects.
3. Arrange for social interaction situations with younger, as well as same age, and older peers.
4. Begin by working to increase tolerance of proximity preferred activities with students who are socially avoidant.

SOCIAL STRAND II: JOINT ACTION


Does the student participate in joint activities with adults or peers (e.g., parallel play, group art activities, weeding a flower bed)?

YES
GO TO STRAND III
NO
CURRICULUM SUGGESTIONS

SOCIAL STRAND II: JOINT ACTION

Does the student participate in joint activities with adults or peers (e.g., parallel play, group art activities, weeding a flower bed)?

IF NO, THEN

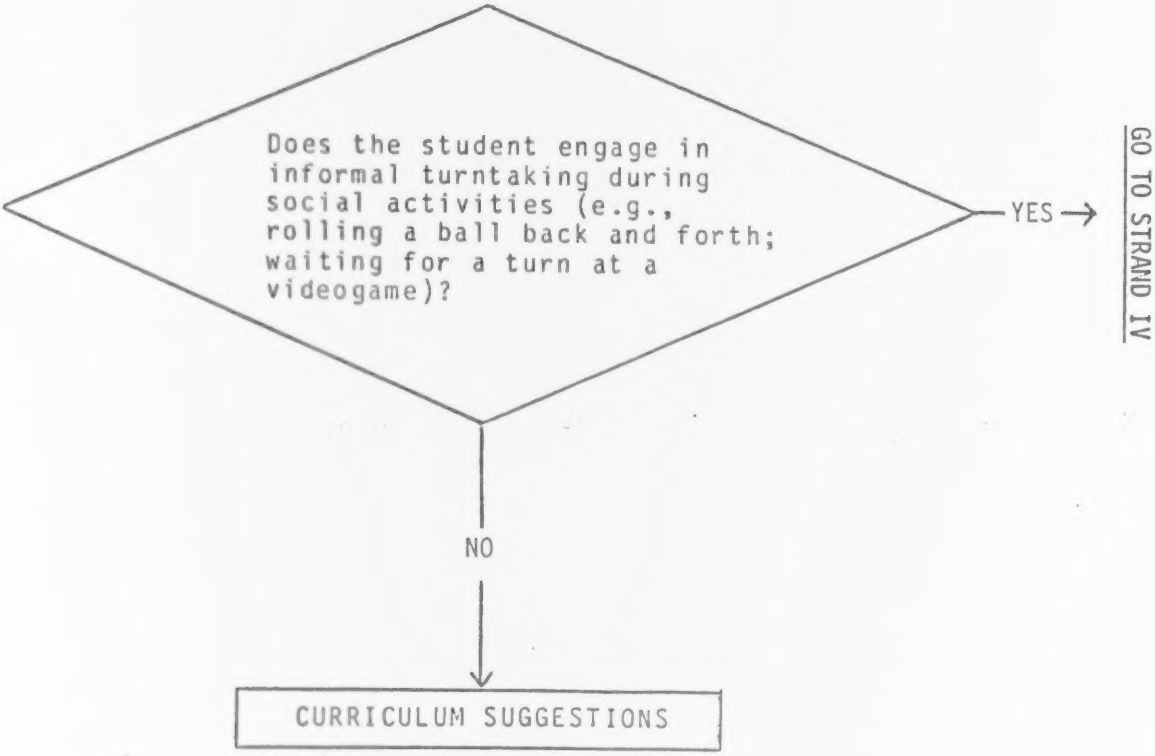
In this curriculum strand, targets involve increasing the student's participation in continuing joint activity with an adult or peer where materials and space are used concomitantly. While clear turntaking or structured exchange of objects is not yet targeted, the student occasionally observes and sometimes imitates the interaction partner. These interactions may include occasional object exchanges of an informal nature. Again interventions are best carried out in the context of the student's preferred activities if possible, using imitation and elaboration of the student's behavior as basic interaction strategies.

Curriculum Suggestions:

1. Use imitation and elaboration of appropriate student behavior to facilitate your participation in the student's play/activity.
2. Arrange activities with duplicate or complementary materials to facilitate object exchanges.
3. Use nonhandicapped peers to frequently initiate social interaction with the student (Strain, Shores, & Timm, 1977).

4. Try to get the student to observe and imitate you by doing something unexpected or unusual in an interaction sequence. Prompt the student to observe and imitate relevant behaviors or peers.

SOCIAL STRAND III: ALTERNATION OF ACTION


Does the student engage in informal turntaking during social activities (e.g., rolling a ball back and forth; waiting for a turn at a videogame)?
YES
GO TO STRAND IV
NO
CURRICULUM SUGGESTIONS

SOCIAL STRAND III: ALTERNATION OF ACTION

Does the student engage in informal turntaking during social activities (e.g., rolling a ball back and forth; waiting for a turn at a videogame)?

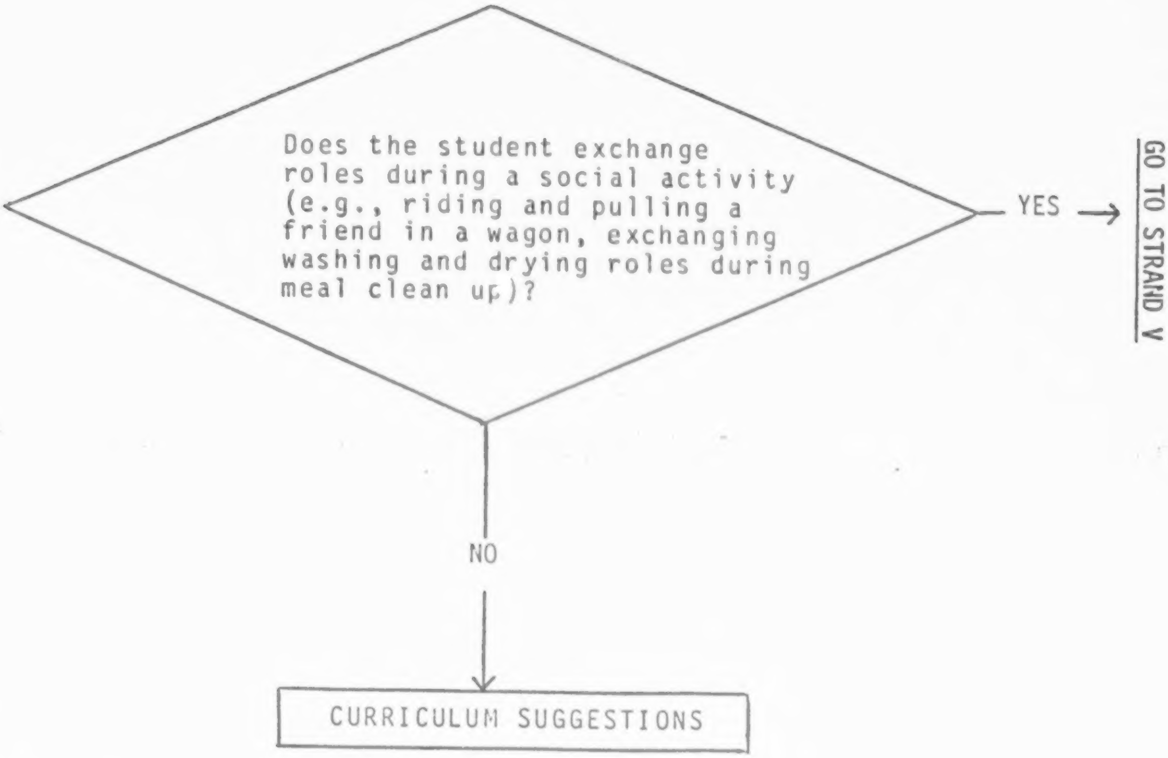
IF NO, THEN

For this Strand, instruction is aimed at simple informal turntaking, consisting of alternation of the same or complementary actions. The student may learn to initiate new actions as well as adapt his actions to changes in the behavior of his partner. Imitation and elaboration may be the predominant strategies through which the student accomplishes these informal turntaking interactions. Intervention strategies rely on imitation training and use of activities and materials that "prompt" turntaking.

Curriculum Suggestions:

1. Set up activities which "prompt" informal turntaking (e.g., seesaw, ball games).
2. Teach turntaking through imitation games - starting with teacher imitation of the student.
3. Teach alternation of complementary actions; e.g., in sand play one student holds out a cup, the other fills it. For older students, one student carries trash can, the other empties ashtrays into it (clean up task).

SOCIAL STRAND IV: RECIPROCAL ROLE EXCHANGE


Does the student exchange roles during a social activity (e.g., riding and pulling a friend in a wagon, exchanging washing and drying roles during meal clean up)?
YES
GO TO STRAND V
NO
CURRICULUM SUGGESTIONS

SOCIAL STRAND IV: RECIPROCAL ROLE EXCHANGE

Does the student exchange roles during a social activity (e.g., riding and pulling a friend in a wagon, exchanging washing and drying roles during meal clean up)?

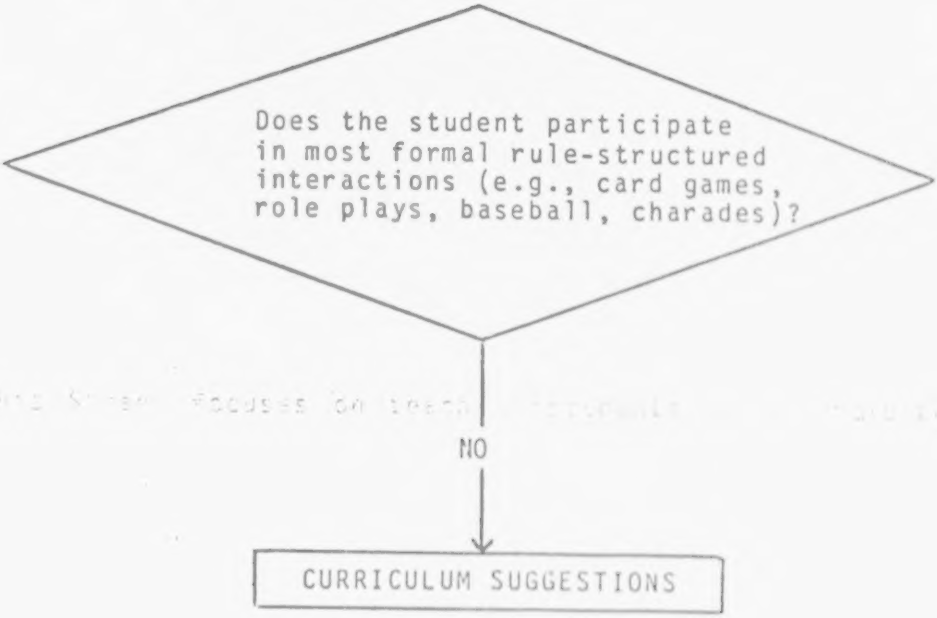
IF NO, THEN

This Strand focuses on teaching students to participate in social interactions where roles are regularly alternated in an informal gamelike fashion, such as in chase games, bike riding activities where one pushes and the other rides, or pitching and batting a baseball. Intervention is based on expansion of simple turntaking skills by modeling longer and more ritualized turns for each "role."

Curriculum Suggestions:

1. Start with relatively simple role exchange, like hitting and pitching a softball - then work toward roles which consist of longer response chains (e.g., one partner rakes leaves into piles, other bags and carries them to trash).
2. Set up activities with repeated short role exchanges at first, such as chase - tag games, dodge ball, or (for older students) stacking and stapling during a collating job.
3. Work toward increasing student's ability to carry out a larger number of roles in a particular situation, e.g., at meal clean up activity, start with washing and drying, add table clearing, floor sweeping, food storing, etc.
4. Teach peers to prompt one another to carry out specific role functions correctly.

SOCIAL STRAND V: FORMAL RULE-GOVERNED INTERACTION


Does the student participate in most formal rule-structured interactions (e.g., card games, role plays, baseball, charades)?
NO
CURRICULUM SUGGESTIONS

SOCIAL STRAND V: FORMAL RULE-GOVERNED INTERACTION

Does the student participate in most formal rule-structured interactions (e.g., card games, role plays, baseball, charades)?

IF NO, THEN

This Strand is focused on exchanges based on an explicit set of rules; e.g., playing formal ball games, card games. These interactions may involve symbolic and/or pretend components, such as required by role playing activities. Instruction is aimed at the student exhibiting flexibility and diversity in her responses within the constraints of the rule structure. Successful performance in these activities will require the student to develop an understanding of specific roles and how these function and vary in relation to other participants within the overall activity.

Curriculum Suggestions:

1. Start with simple "scripts" for role plays (e.g., store clerk, customer) and build the complexity of these (e.g., start with simple purchase, expand to helping find items, make change, etc.).
2. Set up activities which force negotiation and mutual problem solving efforts related to a social activity, e.g., one student plays game wrong, other students have to correct him.

3. With role plays (e.g., waiter, janitor, clerk) set up unexpected problems (e.g., spills, missing materials, etc.) to prompt cooperative attempts to reestablish structure of the activity.

4. Teach simple one step card games (or ball games, etc.), then expand steps/rules gradually within that context.

5. Disrupt or change the rules of familiar games/activities to prompt increased flexibility and diversity of social responses.

FOUR

CLASSROOM ORGANIZATION

Section Four

Classroom Organization

Charles A. Peck

Classroom Organization

The purpose of this section of the guide is to provide some suggestions for organizing your classroom to promote the development of social and communication skills. These classroom organization strategies are aimed at creating an environment which prompts and supports high levels of social and communicative interaction between the student, her teacher, and her peers. We believe that the characteristics of the general classroom environment (e.g., degree of structure, amount of student-student interaction, affective tone of interaction, etc.) may often affect student social and communicative performance as much or more than direct instruction.

Many classrooms for students with autism and severe handicaps are unfortunately devoid of consistent and naturalistic opportunities for social and communicative interaction. Teachers often tend to be shaped into patterns of highly controlling and noncommunicative behavior with students who have few social skills and often exhibit high rates of inappropriate behavior. Students may be moved passively from one activity to the next, and most instruction may take place within a highly controlled "direct instruction" format. Free time, down time, and transition times are often considered non-instructional, insofar as few goals may be defined and relatively little systematic planning may be devoted to them. Language, social interaction, or communication are often considered as curriculum areas to receive their allotted fifteen minute period each day - with relatively little systematic consideration of the nature of the interactions between student, teacher and peers which take place throughout the day. Structuring your classroom to provide the most frequent and meaningful opportunities for social/communicative interaction throughout the school day may be your best bet for improving the social competence of your students.

Increasing the Quantity of Opportunities

Perhaps the simplest way to increase the quantity of social and communicative opportunities in the classroom is to build them into ongoing classroom routines. Opportunities to request objects, activities, or assistance, opportunities to comment on aspects of events or objects, or opportunities to share or take turns at an activity exist or can be created in almost any classroom situation. For example, during arrival time students can request a leisure/play material while waiting for others to come in. During a toileting time, you can delay your usual assistance and have the student request help. In a play or free time activity you can take a few minutes to follow the student's "lead," responding to and elaborating on activities and allowing him to direct your attention and activity. During lunchtime, instead of handing your student a requested item, give him an opportunity to protest appropriately by handing him the wrong item. During individual instruction (no matter what the task) try delaying an expected reinforcer to allow the student to request it. Any number of simple communicative interactions can be built into the day in this fashion, and several social and communicative skills can be practiced within a single activity.

Transitions between activities, or "down time" when formal instruction is not occurring, can also be used to provide opportunities for social and communicative interaction. For example, instead of having all students wait at their desks or work areas during lunch preparation or while others are getting coats on, washing, toileting, etc. you might set up small free time areas, where students can interact in pairs or threesomes. For other students, these times might be used for individually preferred activities - which they choose and request. Other possibilities include having pairs of students carry out simple cooperative chores together to assist in the transition to a new activity, putting one student "in charge" of a familiar preparation activity (giving her an opportunity to direct others), or intentionally setting up an activity incorrectly (e.g., leaving cups off the snack table, but offering juice to students), to provide students opportunities to protest or communicate directives to you.

A natural time to focus on arranging increased social/communicative opportunities is during free play or recreational periods. A major advantage of these times is that you can observe the student's preferred activities, and set up social and communicative opportunities around them. For example, it is relatively easy to keep preferred play/leisure materials out of reach (but in sight). This sets the occasion for requesting those materials. You can also provide opportunities for negotiation, sharing or turntaking by providing too few materials or complementary materials (i.e., each student has some pieces of the puzzle).

Increasing the Quality of Opportunities

Effectively organizing your classroom to promote the development of social competence involves considering the types of social and communicative opportunities available as well as their frequency. We feel that a major characteristic of most classroom environments for students with autism and severe handicaps is an extremely high degree of structure - in the sense that students' behavior is directly controlled by teachers and aides most of the time. While it is undeniably important that students learn to respond to instructions, follow basic classroom routines, and maintain reasonably appropriate behavior, it is also evident that students may seldom experience opportunities to be in control themselves - that is, make choices, direct the behavior of others, and control events in the environment. Since these types of experiences are the goals of much of our social/communicative behavior, it seems crucial that students be exposed to regular opportunities of this type, and to related instruction. Several specific types of social/communicative opportunities are outlined below, together with suggestions for instruction.

Opportunities For Control

One of the earliest and most important lessons that is learned in the course of social development is that one has some control over the social environment. Infants learn this, perhaps first in the context of the parents' responsiveness to crying (Ainsworth & Bell, 1974). Over time young children learn more effective and specialized ways to control the social environment - through gestures, vocalizations, eye gaze, and ultimately speech. They learn these skills in the context of an environment that is highly attentive and responsive to each new social or communicative attempt (Lewis & Goldberg, 1969), and which perhaps even "over-interprets" the amount of true social and communicative intention that is actually there (Kaye, 1982). The important point is that this early environment is optimal for developing basic social and communicative skills, since the child's "significant others" are so ready and willing to respond to the child's attempts at control. These types of opportunities are not typical of most special educaiton classroom environments. However, some opportunities for student control can be created even for the most developmentally handicapped students.

Student-directed play. One strategy for providing opportunities for control is to establish some regular periods when you participate in leisure/play activities with the student, allowing him to "direct" the activity. To do this effectively will require that you refrain from both prompting and direct reinforcement techniques - which may promote more appropriate behavior but which also establish you as the person controlling the activity. Instead, during student-directed play we suggest imitating and elaborating any appropriate student behavior as a basic approach to interacting with the student. This will allow the student to choose and control the nature of the play activity, while providing some differential feedback from the teacher regarding behaviors that are more socially effective or appropriate. This informal and nondirective sort of feedback appears to closely resemble natural interactions between parents and children who are learning early social and communicative skills (Clarke-Stewart, 1978; Kaye, 1982).

Peer interaction. Another classroom organization strategy for providing opportunities for control involves arranging certain types of peer interactions. Some researchers have suggested that important opportunities for learning to control the behavior of others occur in the context of interaction with peers - particularly younger peers (Furman, Rahe, & Hartup, 1979; Hartup, 1978). Arranging interactions with nonhandicapped peers may provide a context in which autistic and severely handicapped students will find partners responsive to their attempts at directing interactions - especially if nonhandicapped peers are not given an instructional role. Even more opportunities to practice controlling and directing interactions may be available if the nonhandicapped interaction partners are developmentally younger than the target student. For example, Bednersh (1983) recently compared interaction levels between severely retarded students and groups of younger and same-age peers. She found that SH students initiated and "directed" more interaction with the younger peers than the same-age group.

Choice-making. Opportunities to make personal choices are also often relatively absent in SH classrooms. Creating simple choice-making situations can be an easy way to provide additional opportunities for student control, as well as setting up meaningful opportunities for communication. For example, instead of always deciding the sequence in which the student will complete a regular set of instructional tasks, you might allow the student to choose what to work on first, second, etc.

Choices can also be created when reinforcers are delivered - by simply providing two or more types of reinforcers and waiting for the student to request the preferred one. Another form of choice-making might involve seating arrangements during a group activity or snack - students may request to be in a specific chair or next to a friend. All of these situations entail a little extra teacher consideration of possible social/communicative opportunities, but may involve relatively little extra time or preparation.

Increasing Continuity in Curriculum Implementation

In this section several suggestions are offered toward better organizing your classroom so that there is continuity in what students are expected to learn across situations. We believe that this is most important if students with severe social and communicative handicaps are to acquire and generalize functional skills.

Establish routines. An important classroom organization strategy involves establishing some basic routines for regular social/communicative interactions. This will allow the student to be familiar with the basic structure and sequence of events in an interaction, and focus on refining and expanding her skills in that situation. An example of this might be a regular snack time. If you establish a clear routine including preparation (washing, setting the table, obtaining food), serving (requesting food, turntaking, etiquette), and clean-up (excusing oneself, utensil removal, washing), students can learn and practice new social and communicative skills (e.g., gestures, vocalizations, eye gaze direction, signs, speech) in a context in which they already know the basic content and sequence of the activity. Students' roles in the activity may change over time as they learn to be the "server," the "bus person," etc. They may learn to prompt each other when an error is made (e.g., someone doesn't get served), or when they know the target response to be made ("say thank you").

Multiple activities. Another strategy for increasing curriculum continuity is to include instruction for many of the same goals in multiple activities. This is not difficult to do with many social and communicative skills since they are so basic to most interactions. For example, you might teach a student to request objects at snack, free play, during direct instruction, or during a washing activity. Similarly, if you are focusing on simple turntaking, you might allow the student to take turns at using a material during a cooking activity, or in taking turns reading flash cards during a direct instruction period. Providing instruction and practice across situations in this fashion will assist the student in learning to respond to varying social cues, and to perform and target skill in varying manners according to specific situations.

Staffing. Another aspect of classroom organization which impacts the continuity of curriculum implementation has to do with staffing. Two suggestions are offered. First, a basic strategy of gradually increasing the variety of people who implement new instructional programs may be followed as the student increases her competent performance of the new skill. In other words, in the initial phases of instruction it is suggested that one staff member consistently implement training, but when the student learns the new behavior new staff members should be regularly rotated through that instructional situation, so the student learns to interact effectively with others too.

The second suggestion regards use of support staff, particularly speech and language specialists. As we have argued more extensively elsewhere (Peck & Schuler, 1983), the traditional "pull-out" strategy for providing speech and language services seems quite unlikely to promote the types of functional communicative behavior in natural social situations we believe is most important for autistic and severely handicapped students to learn. A more cost-effective strategy for using the expertise of speech and language specialists would be to focus their assessment and intervention efforts in the classroom itself (or perhaps home or community settings). This will allow them to be most "in tune" with the student's actual communicative needs and performance, to design interventions which are keyed to these needs, and to model effective instructional techniques for classroom teachers.

Data Collection

Predictably enough, we believe that regular data collection is crucially important if classroom teachers are to maintain instructional programs which are flexible and responsive to student needs. But most teachers collect very little data on student progress - why? We think a number of factors reduce the willingness of most teachers to collect data. We list these below together with some suggestions for change.

First, in most school systems there is relatively little administrative interest or support for data collection functions outside the typically superficial types of data required for annual IEP (Individual Educational Program) meetings. Classroom teachers who do regularly collect student progress data seldom even have a chance to share much of it at such meetings, which are usually focused on matters of placement or provision of specific services rather than on the processes of daily instruction. This relative lack of system support and interest in data collection is a difficult problem - for which we have no real solutions! We do, however, suggest that whatever student progress data you collect be regulary shared with parents, relevant support staff, and your immediate supervisor. The support of all of these individuals for your program seems likely to increase as they become aware of the systematic and informed basis of your instructional decision making.

A second factor which may inhibit data collection is a lack of perceived usefulness of the data collected. This feeling often occurs when teachers collect more data than they can really process regularly for decision making. Although many teachers have received training which emphasizes the value of direct, daily measurement of student performance (e.g., Snell, 1978; Lovitt, 1976), this practice often generates more data than most teachers can really use. We suggest that you collect only as much data as you can actually review thoroughly and use in decision making. Obviously, the closer you can be to monitoring student progress on a daily basis the better decisions you will make - but a little data well used is much to be preferred over reams of paper you never look at! Directly measuring student progress on targeted objectives at least once per week may be a reasonable minimum goal.

Importance of Generalization Data. Even if you devote relatively little time to data collection, be sure you make some assessment of whether your students maintain and generalize skills you've taught them. Even if students successfully acquire new behaviors in training situations, these skills may not be maintained or used in natural social/communicative situations in school, at home, or in the community. Thus, the net benefits of your instruction may be very low.

A format for collecting generalization data is presented at the end of this section. As you can see, we recommend monitoring student performance in at least two (generalization) settings which bear some functional resemblance to the training setting. After a baseline period of no intervention in the training setting, instruction is begun. Including this baseline period will give you valuable comparison data by which to judge the effects of your instruction. Instruction is not provided in Settings (contexts) II and III for a few more days - to see if effects from Setting I will spontaneously generalize. If not, instruction is begun in Setting II, while the students performance in Setting III is monitored without direct instruction. Instruction is later delivered in Setting III if sufficient generalization is not observed. The back of the data collection sheet can be used to record comments for each day's intervention.

Some Data Collection Techniques. Although we will not cover basic data collection strategies here (several excellent reviews already exist - see R. V. Hall, 1975; Kazdin, 1980; Sulzer-Azaroff & Mayer, 1977), there are several special techniques which you may find helpful.

If time is a problem (and it usually is!) you may wish to measure only a sample of your student's behavior. A number of techniques can be used - what must be remembered with all of them is that the way you sample the behavior may bias the information you get. Be sure to carefully consider whether the small amount of student behavior you actually measure reflects the student's general performance in relevant situations. Here are some sampling ideas.

1) Time sampling: measure the student's behavior only during a portion of the available time, e.g., during every third minute, or the first ten minutes of each hour, for the first five minutes of a specific activity.

2) Point sampling: briefly check and record whether the student is or is not engaging in the targeted behavior at regular points in time, e.g., every fifth or tenth second, at each minute, at each fifth minute, etc. You can also use this method with groups of students, looking around the group (room) and checking off those students engaged in targeted behaviors (e.g., social play, independent task completion, etc.).

3) Event sampling: you can measure the student's behavior on a portion of possible events or trials. For example, record student responses on every fifth instructional trial, or on the first ten trials each day. If the skill is not typically taught in a discrete trial format (and most social/communicative skills shouldn't be), you can still use the event sampling technique. For example, there might be four or five situations during the day in which your student has occasion to request assistance - you can "sample" from these events by recording performance only in one or two of them.

Staffing Considerations. The quality of the data you and your staff collect and, more important, the quality of the programming you deliver, will be affected by how well you coordinate your efforts. We think that regular team meetings are essential if classroom organization is to be optimal for social and communication skill development. Regarding data collection, such meetings provide opportunities to get some check on the consistency of data collection procedures across staff (the best way to do this is to have staff members actually observe at the same time and compare their records of the student's behavior). Data-based discussion of student performance at these team meetings will quickly make your data collection efforts a central part of your decision making process and will probably lead to more consistent and coordinated implementation of programs in your classroom.

Validity. Sometimes it seems that results of formal data collection do not accurately represent student growth. It is not uncommon that predictions about which behaviors will change as an effect of instruction are somewhat off target, and the resulting data may not reflect actual accomplishments. Sometimes the reverse is true, and the data look great but you know the student hasn't learned truly functional new skills. We make two suggestions which may be useful. First, it is a good idea to supplement your quantitative data (i.e., counts of student behavior) with some occasional anecdotal record descriptions of student performance. This more narrative, descriptive information can provide information lost in simple measures of frequency, duration, latency, etc. Second, we think it useful to collect subjective ratings regarding the gains of your student as perceived by parents, staff members, other teachers, etc. In this way you can collect important data that may "fall through the cracks" of traditional data collection systems.

SCCP Data Collection

Teacher ____________________ SCCP Consultant ____________________

Site ____________________ Objective: ____________________

Child Initials ____________________ ____________________

Procedure: ____

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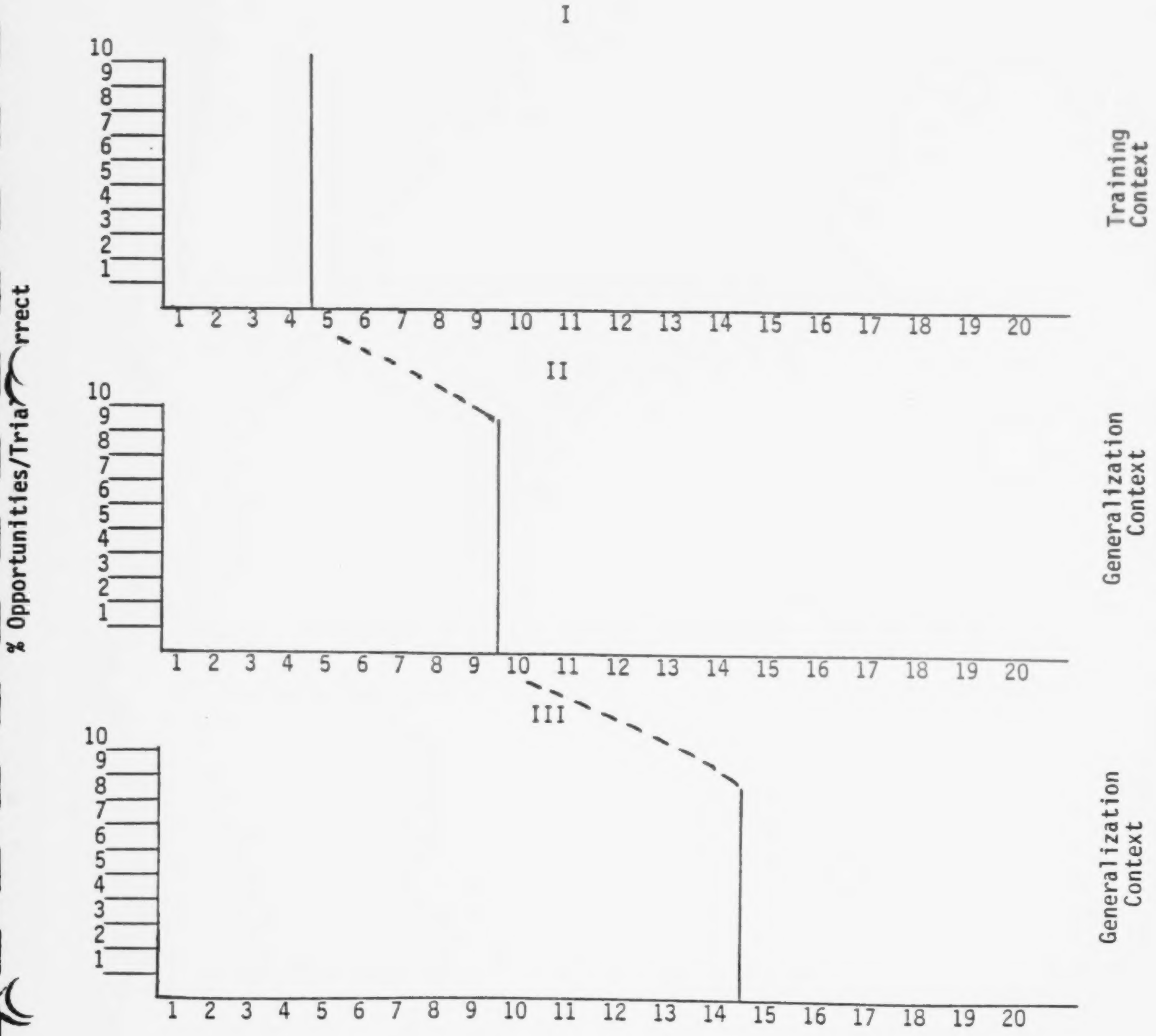
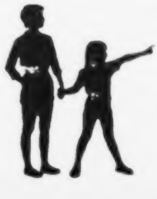


FIVE

INSTRUCTIONAL TECHNIQUES



Section Five

INSTRUCTIONAL TECHNIQUES

Charles A. Peck

Adriana L. Schuler

INSTRUCTIONAL TECHNIQUES

The purpose of this section of the guide is to describe a number of instructional techniques which have been found useful for teaching social and communication skills to students with autism and severe handicaps. Unfortunately, the existing body of research-based knowledge regarding how best to teach these skills is relatively limited. For this reason, teachers will continue to rely for the foreseeable future on a combination of clinical judgement, theory, and observed student progress in determining which instructional methods work best. Thus, most of the suggestions which follow represent our own beliefs about good teaching practices. Where these beliefs have been supported in the research literature, relevant references are cited. The remaining suggestions are offered with the emphatic caveat that reliably observed student progress must always be the "bottom line" measure of the worth of any instructional technique. Further, our experience suggests that perhaps the most important characteristic of any instructional program is its ability to adapt in response to student outcomes.

Existing research has demonstrated that basic behavioral intervention techniques (i.e., prompting, modeling, and reinforcement of specific behaviors) can be used to teach simple social and communication skills to autistic and severely handicapped students. The types of skills typically taught using these techniques have included motor imitation (Baer, Peterson & Sherman, 1967), language imitation (Lovaas, 1977), and simple cooperative responses (Morris & Dolker, 1974). A number of language intervention programs have been developed which are based on these principles (Bricker & Bricker, 1970; Guess, Sailor, & Baer, 1976; Kent, 1974). Behavioral intervention techniques have thus been shown to be quite useful, and mastery of these techniques is probably essential to effective instruction of students with severe handicaps. Excellent "how to" information regarding modeling, prompting, reinforcement, data collection, etc. is readily available elsewhere (see, for example, the R. Vance Hall series on behavior modification or L. K. Miller's book Principles of Everyday Behavior Analysis). For this reason, this section focuses on instructional techniques specifically related to teaching early social and communication skills. Many of the techniques and suggestions are particularly oriented to the problems of generalization often encountered in teaching these skills.

Selecting the Teaching Situation

Our chief consideration in selecting or arranging situations in which to teach social and communication skills is to make them functional. This means using (or creating) situations in which the student's behavior will have an obvious and useful impact on her environment. The notion of functionality is a broad one, and at least three (overlapping) uses of the term are relevant here. First, Brown and his colleagues (1979) have suggested that a teaching situation may be considered functional to the extent that it is similar to situations a student may encounter in current and future "least restrictive" environments. Thus, providing instruction in natural community situations such as fast-food restaurants, bus stops, or movie houses may be considered more functional than teaching in segregated, self-contained classroom settings.

A second sense in which a teaching situation may be viewed as more or less functional is related to the likelihood that trained skills will be maintained in that situation without further teacher intervention. For example, teaching severely handicapped students social initiation skills in a typical SH classroom free time situation may be much less functional than teaching the same skills in a recess situation with nonhandicapped peers. This is because most of the severely handicapped students in the segregated classroom will be less able to respond to and maintain social exchanges than nonhandicapped peers (Strain, 1983).

A third interpretation of the concept of functionality in selecting teaching situations is related to the "student's view" of the situation. While the foregoing examples of "functional" teaching situations may meet adult or teacher criteria for situations in which the student's behavior will be both useful and impactful, neither effect may be recognized or appreciated by the student. In other words, unless the student is already attempting to obtain food at a restaurant, or to enter a play situation with peers, or to get somewhere on the bus, the functional aspects of these situations may not be apparent. Situations which are functional from the student's point of view are those in which the student is already trying to accomplish something. Instruction can be readily applied in these situations to improve the student's means for accomplishing a specific goal. For example, instruction to develop clearer or more appropriate communicative behaviors for requesting objects can be carried out in situations where the student is already trying to obtain an object, such as snack time, recess, or lunch. It is our belief that it is most important to focus on situations which are functional from the student's point of view, particularly when teaching early social and communication skills. This may help the developmentally young student to understand that social and communicative behaviors are a means for achieving his own goals, rather than simply being adult-imposed responses to be emitted in order to obtain a bit of cookie or praise.

It should be evident by now that we do not suggest that social and communicative behaviors be rotely taught in situations "stripped" of their functional context. Thus, the traditional practice of removing the student from "extraneous" stimuli, presenting repetitious and unvaried "SDs" or cues for specific student responses, and providing consequences unrelated to the nature of the situation or the student's response are viewed as possibly contributing to some of the generalization problems observed by interventionists using these techniques (Lovaas, Koegel, Simmons, & Long, 1973). Traditional "discrete trial" instruction certainly has many useful applications; however, we believe that the fundamentally dyadic and reciprocal characteristic of natural social and communicative interaction is quite difficult to maintain with instruction of this type.

Incidental Teaching

Many of the considerations outlined above are reflected in strategies for "incidental teaching" used by many teachers and formally described by Hart and Risly (1975), Hart and Rogers-Warren (1978), and others. Incidental teaching simply refers to the practice of inserting brief instructional interventions into the many unplanned "incidents" during the day in which students could effectively use language or other communication skills to control the environment. The technique has been demonstrated most often in free time situations, where students often have to interact with teachers or peers to obtain desired objects or activities. Instruction can be delivered whenever a situation occurs where the student is attempting to get a toy, when the student needs help, or when the student wants to direct adult or peer behavior. Typically, the teacher briefly intervenes in the situation, prompts the student to use some communicative behavior ("What do you want?") models an appropriate response if the student fails to make one and delivers the requested item, assistance, etc. when the student makes the correct response (or an approximation).

Incidental teaching is a very "natural" form of instruction, and it can be carried out in some manner in almost any interactive situation. At snack time a teacher might pause before serving a cookie and prompt or model a request from the student. During direct instruction the teacher can prompt the student to request an expected reinforcer. While carrying out a dressing activity (especially when the student wants to get dressed - for example to go outside) the teacher can prompt requests for assistance or requests for articles of clothing.

Incidental teaching techniques are easy to use if the teacher just remembers to use them! They do not require extensive restructuring of classroom routines or instructional periods, but they do require that the teacher be alert and responsive to unplanned situations where the student can effectively use communication skills.

Using Naturalistic Cues

Other considerations for arranging antecedents for social and communicative interaction are related to the types of cues and prompts that are used. Falvey and her colleagues (1980) have suggested that the use of "natural" cues (and consequences) for behavior is more likely to promote generalization of acquired skills than more artificial prompts. Several approaches to making cues more natural are outlined here.

Delay. Halle and his associates (Halle, Marshall, & Spradlin, 1979; Halle, 1982) have demonstrated that simply delaying an anticipated event may prompt communicative behavior from students with severe social and communicative handicaps. This practice may be particularly useful with shaping procedures. The delay tactic is a very natural prompt for communicative behavior if the student is in a familiar or clearly understood situation where a desired event is easily anticipated. Unfamiliar or ambiguous situations are not likely to be as appropriate for the delay procedure, since the student is less likely to recognize the possible uses of communicative behavior in these situations.

Examples of situations in which the delay procedure might be used effectively include:

- at snack, delay serving the student at the expected moment.
- during a repetitive play activity, delay taking your turn (e.g. ball rolling, seesaw).
- other times when the student expects you to do something, e.g., delay opening a door for him, handing her a reinforcer, or helping with a coat.

Gaze. Another natural cue for social or communicative interaction is eye gaze. That is, simply looking "expectantly" at the student in an obviously communicative situation may prompt an attempt at communicative behavior. Again, the nature of the situation is a critical factor here, and the student must have some understanding of the possible uses of social/communicative behavior in that situation before she will make any clear attempts to communicate. Shifting your gaze from the student to an object to be requested may sometimes effectively prompt a communicative request. The use of gaze shifts toward the student could naturally be combined with some delay of an anticipated event as described above.

Other prompts

In general, we believe that using the least intrusive, most natural prompts possible will better facilitate generalization of social and communicative skills to settings where the student must perform independently of teacher guidance. Following this principle, verbal prompts of a general nature like "what do you want?", casual vocalizations, or gestures vaguely conveying direction or encouragement are preferable to more explicit prompts such as "say 'want coffee'" or requests for imitation ("do this"). This generalization is made on the assumption that those less intrusive prompts produce some useful approximations of the targeted social or communicative behavior. If less intrusive prompts are ineffective, you might also try to rearrange the situation to provide more "setting cues" for the desired behavior, or for a peer to model the behavior before going to more direct adult prompting strategies. The reason for this avoidance of direct adult prompts is that we believe that many students with limited social and communicative skills may become trained to consistently attend to adults for cues for correct behavior. This disrupts the "flow" of communication and social interaction, and may not help students learn to analyze more natural cues in normal social situations.

Shaping Versus Prompting

Also related to these concerns, our experience suggests that shaping strategies, rather than direct prompts for targeted behaviors may be more effective in developing generalized social/communicative behavior. Shaping has traditionally referred to the reinforcement of successively closer approximations of a complex target behavior across repeated instructional trials. The number of trials required to shape complex behavior is generally far too great to make pure behavior shaping a cost-effective strategy for exclusive use in classrooms for students with severe handicaps. However, the important advantage of the shaping approach is that it promotes the student's selection and modification of effective social/communicative behaviors rather than emphasizing reliance on adult prompts in deciding how to behave. This may facilitate the student's perception and analysis of contingency relationships between her own behavior and social outcomes. This may be particularly important during early social and communicative development, when students are first learning ways in which their own behavior can control the social environment.

To provide an example, you might choose to shape some early communicative behavior for requesting juice at mealtimes. A first step would be to establish some student behavior as a consistent request. The choice of this behavior should reflect consideration of how it might later be shaped into a more effective and appropriate response. A likely first step behavior might be reaching for the juice, so initially you give the student the juice every time she reaches for it. When this response is well established, you might delay giving the juice until the student reaches and looks at you (gaze shift). When this communicative behavior is clearly and consistently used, you might delay the juice again until the student vocalizes. At this point you would have shaped a very clear, socially directed request behavior and, since the behavior was gradually developed in a situation where the student understood its function or purpose, it will likely be maintained as long as it produces the desired juice. Perhaps most important, the student has not learned to look for an adult to tell her what to do in this communicative situation - but has been subtly "led" into discovering more and more effective communicative behavior as she needed it.

Making Social/Communicative Behavior Useful

As you will immediately recognize, many of the considerations outlined previously regarding selection of the instructional situation also include analysis of consequences. Thus, identifying situations in which social/communicative behavior is functional from the student's point of view will "automatically" provide guidance in selecting natural and motivating consequences for targeted behaviors. Certainly keying instruction to situations where the student is already motivated to interact for some reason is the surest way to avoid having to use artificial reinforcers - which must later be faded or replaced. Thus, teaching students to request things or activities they already want, to carry out social play activities they are already interested in, or to (appropriately) refuse or protest things or events they already dislike, will in itself involve motivating and natural consequences for effective performance.

There is some evidence that arranging situations in which objects are actually used or actions are carried out may help students to learn related concepts. For example, Saunders and Sailor (1979) taught students to identify familiar objects (e.g., "ball", "cup") and provided opportunities to use the objects as consequence for correct labeling. Comparing this procedure with use of unrelated reinforcers for correct labeling, they found superior learning took place when use of the labeled object was the consequence. Similarly, Williams, Koegel, and Egel (1981) showed that autistic students learned to imitate actions better when some function was attached to specific actions (e.g., bending over to pick something up rather than just bending over) than when only social or tangible reinforcers were used. The studies both suggest that the functions of objects and actions are integrally related to learning - a principle which has been widely recognized in normal development for some time (Piaget, 1951; Nelson, 1973).

Responsiveness to Student Social and Communicative Attempts

It is unfortunately common to observe classrooms for students with autism and severe handicaps where many or most student attempts to interact or communicate go without response from either teacher or peers. The widespread practice of grouping students with poor social/communicative skills (particularly autistic students) in the same classroom obviously contributes to this problem since these students are unlikely to respond to each other. We also believe, however, that many teachers have not been adequately trained to recognize and respond appropriately to early attempts at social/communicative interaction, which may be carried out through rather primitive or even aberrant means. These factors may result in the extinction of the student's attempts to interact, or the development of more severe aberrant behaviors such as tantruming, self-injury, or aggression (Carr, 1977; Weeks & Gaylord-Ross, 1981).

It is our belief that it is of the utmost importance that teachers, and peers if possible, be alert and responsive to social or communicative behavior attempted by the student. This may involve considerable flexibility in terms of the type of behavior which is acceptable by many teachers. This reflects our belief that the first priority for instruction is to teach the student that his appropriate behavior can have an effect on the social environment. Responding to as many of the students social/communicative behaviors as possible probably represents the most basic type of consequence which must be arranged if students are to learn the critical relations between their social behavior and its effects.

SIX

REFERENCES AND APPENDIX

Section Six

REFERENCES

REFERENCES

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APPENDIX A AND B

Curriculum Activities

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SAMPLE CURRICULUM ACTIVITIES

The sample curriculum activities in this appendix are designed to be used in conjunction with the Communication and Social Curriculum Decision Guidelines. For each of the five communication strands and five social strands, the activities are representative of different opportunities that occur in school and community settings. Three different contexts are considered within individual strands, including 1) adult-student, 2) student-student, and 3) group situations. Sample activities are designed for particular settings as well, including a) play, leisure, or recess, b) meal time or circle time, and c) community. All activities are labeled with a code which refers to the curriculum domain (social or communicative), the strand number (I-VI), and the foregoing contextual arrangements (1-3, a-c).

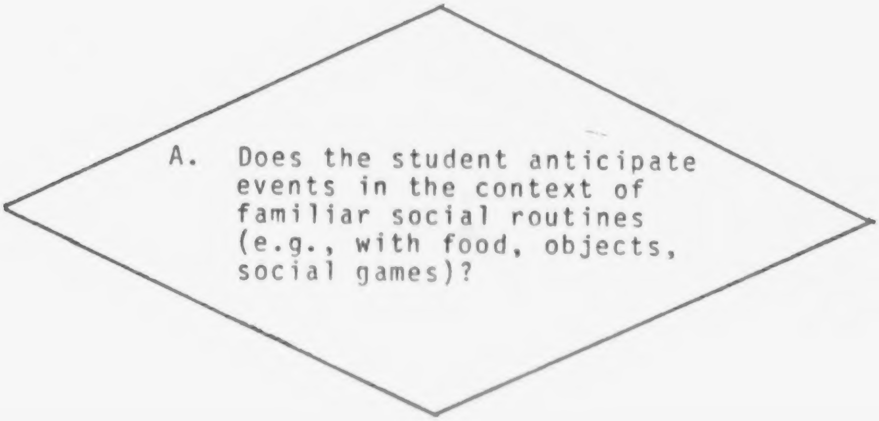
The activities are provisional in nature. They should be used as a framework for the generation of new implementation ideas. After reading the introduction to the curriculum development guide and the decision guidelines for the communication and social curriculum, the classroom teacher may implement sample curriculum activities chosen from this appendix. When she has familiarized herself with the activities and their relationship to the conceptual framework provided by the guidelines, she should be ready to generate activities herself that suit the needs of individual students within the environmental demands of specific school/community settings.

Appendix A

Communication Curriculum Activities

COMMUNICATION CURRICULUM STRAND I: ANTICIPATION OF ENVIRONMENTAL EVENTS

Goal: Anticipation of events in a regular routine



A. Does the student anticipate events in the context of familiar social routines (e.g., with food, objects, social games)?

COMMUNICATION CURRICULUM STRAND I: ANTICIPATION OF ENVIRONMENTAL EVENTS

Context: (1) Adult-student (a) Play/leisure/recess
Activity: Anticipation of leisure time

Procedure: Have a set schedule so that after work time daily (at a specified time) the student puts away his work and goes to play with his favorite toy or engage in his favorite activity (e.g., listening to records with headphones). After this pattern of events is established, prevent him from going to the "leisure area". The student must demonstrate some anticipatory behavior (e.g., smiling, vocalizing, body movement, gaze shift) before he is allowed to continue towards the leisure area.

Variation on procedure: At other times during the day, delay presenting an expected event until anticipatory behavior is produced by the student. Examples include: stopping the student on his way to the bathroom, stopping him on the way to the cafeteria for lunch, etc.

Data collection: Record occurrence/nonoccurrence data on spontaneous anticipatory behaviors per session. If prompting is necessary, count frequency and type of prompts used.

Context: (1) Adult-student (b) Meal time/circle time
Activity: Changes in the daily snack routine

Procedure: During a food routine, such as snack time, change one element of the established pattern. For example, if the student always receives some sandwich and juice, present him with something he likes better part way through the routine. You could give him some ice cream instead of some sandwich. Contingent upon any new response, such as a smile or a gaze shift, socially comment by saying "Oh, you like that ice cream!" and give him another bite. Continue feeding him his regular snack and intermittently disrupt the routine by providing ice cream. The objective is to establish consistent anticipation responses for the ice cream.

Variation on procedure: Changes in the snack routine can also involve preparation activities. For example, when food items are distributed to each student, the target student could "accidentally" be skipped over. Watch for any anticipatory behaviors such as reaching or looking towards the teacher before providing the food item.

Data collection: Collect frequency data on number of responses exhibited by student contingent upon disruption of the routine. Note the type of response observed as well; e.g., smile, gaze shift, or re-orientation towards the adult. Collect this data during alternate snack sessions.

Context: (1) Adult-student (c) Community
Activity: Anticipating food at a fast food restaurant

Procedure: After ordering and receiving food at a fast food restaurant, sit with the target student and share french fries or some other food item with her. Give her french fries at regular intervals until a routine is established. Then interrupt the routine by not giving her another one. Wait for some type of anticipatory response, such as a gaze shift, vocalization, or reaching behavior before giving her more french fries.

Variation on procedure: When leaving the restaurant, the teacher could help the student throw away her trash and get her sweater or coat. When the teacher helps the student put on her sweater or coat, she could help her with one arm of the sweater, letting the other arm drop. Contingent upon any anticipatory behaviors, such as turning her body to try to get the second arm or reaching towards it, the teacher should help the student finish the task.

Data collection: Record occurrence/nonoccurrence data on anticipatory behaviors and note type of behaviors observed (vocalization, reaching, etc.) during the first five minutes of the eating activity.

Context: (2) Student-student (a) Play/leisure/recess
Activity: Anticipation of play with a peer

Procedure: A physical activity, like riding on an older nonhandicapped peer's knee or rough-housing on the floor together, should be discontinued once the student exhibits a state of ongoing excitement. Recurrence or continuation of the activity should take place contingent upon any change in the student's response pattern. (This is a situation in which you can evaluate which means of communication would be suitable for the student; see section on Alternative Communication Systems.)

Variation on procedure: Disruption of other student-student activities can be implemented. For example, while playing with sand in proximity to the target student, the nonhandicapped peer can hold the student's hands to keep him from continuing to pick up and drop sand. Contingent upon a response from the target student, like a gaze shift or orientation toward the student, the peer can allow him to continue his sand play by releasing his hold.

Data collection: Collect frequency data on number of changes observed in the student's responses contingent upon disruption of the ongoing activity. Record type of response (e.g., vocalization) as well.

Context: (2) Student-student (b) Meal time/circle time
Activity: Anticipating snack time treats

Procedure: During snack time or for an afternoon treat, make milk shakes with the students. Pair the target student with a nonhandicapped peer who can make a milk shake independently for both of them. Have the nonhandicapped peer pour a small amount of milk shake into the target student's cup. When the student drinks it, the peer can pour another small amount. Once a routine seems to be established, with the peer pouring and the student drinking, the peer can pretend to pour some more but not actually do so. Contingent upon a response from the target student when he realizes there is nothing in his cup, such as a vocalization or re-orientation towards the peer, the peer should provide more milk shake. Initially, the peer may need to shape a response.

Variation on procedure: The peer could put a different liquid in the cup, such as water, to see if he gets a response from the target student.

Data collection: Count frequency of responses exhibited by the student contingent upon disruption of the milk shake routine. Also note the type of response observed, e.g., vocalization or touching the container holding the milk shake.

Context: (2) Student-student (c) Community
Activity: Continuation of shopping cart ride

Procedure: On a grocery store trip, the student rides in a shopping cart pushed by a nonhandicapped peer (roles could be switched at some point). The peer develops a move/stop pattern, so that there is a clear onset and offset to the activity. Once the pattern seems established, resumption of the cart movement can be made contingent upon some motor initiation exhibited by the student; e.g., change in body position, orientation toward peer, etc.

Variation on procedure: If older students are involved, the student and peer can push the cart side by side instead of one person riding in the cart. The nonhandicapped peer can still establish a move/stop pattern.

Data collection: Collect frequency data during each grocery store trip on number and type of responses exhibited by the student contingent upon disruption of the routine.

Curriculum Strand I

Context: (3) Group (a) Play/leisure/recess
Activity: Anticipating swimming pool activities

Procedure: During group water play in a small plastic pool or at a swimming pool, have everyone sit in a circle in a shallow area and splash together. When the target student is obviously enjoying the activity, have everyone stop splashing. Watch for the student to exhibit a change in behavior, such as a quieting response or a change in body position. Contingent upon this new behavior, everyone should start splashing again.

Variation on procedure: If the student likes it, water could be poured over him as he stands in the pool. Once a water-pouring routine is established, stop pouring water and watch for a change in the student's responses before continuing the activity.

Data collection: Collect frequency data on number and type of observed changes in the student's responses every time the splashing game is played.

Context: (3) Group (b) Meal time/circle time
Activity: Anticipating events in the lunch line

Procedure: Teach the student to stand in the cafeteria line at lunch time with other students, and to pick up his food from the serving person. Once this routine is established, have the serving person delay the serving routine and wait for an anticipatory response from the student (e.g., reaching for food, body movement or gaze shift). Contingent upon this response the sequence should be continued.

Variation on procedure: Have a nonhandicapped peer stand in line with the student and help him to put the silverware, napkins, milk, etc. on his tray each day. When this routine is well established, the nonhandicapped peer should "forget" to help him one day. The student should show some kind of anticipatory behavior (e.g., reorientation toward the peer or hesitations while moving through the lunch line) before the peer should help him. The peer should prompt if necessary.

Data collection: Record occurrence/nonoccurrence data on spontaneous anticipatory behaviors in the lunch line daily. Record frequency and type of prompts used.

Curriculum Strand I

Context: (3) Group (c) Community
Activity: Anticipating events at a birthday party

Procedure: Have some of your students attend a birthday party with several nonhandicapped peers. Play a game in which the students dance to music when it is played and when the music is shut off, everyone sits down. Continue this routine, turning the music on and off and allowing the student's dance time. Have a nonhandicapped or high functioning student control the record player. After this routine is well established, delay putting the music on for dancing. The target students in the group should show anticipation of dance time by eliciting a response such as a gaze shift from the record player to the peer who is controlling the record player. Alternative responses include vocalizing or shifts in body movement. When such behaviors are produced, the peer can turn on the music again.

Variation on procedure: Follow the same procedure at a birthday party playing "musical chairs" instead. This dance time activity can also be performed in the classroom as a group leisure activity.

Data collection: Record occurrence/nonoccurrence of spontaneous anticipatory behaviors produced by the target student during the first ten minutes of this activity each day.

COMMUNICATION STRAND II: USE OF SOCIALLY DIRECTED BEHAVIOR TO INFLUENCE THE ENVIRONMENT

Goal: To influence the environment through social means.

A: Does the student use socially directed behaviors (e.g., look at adult while vocalizing or reaching; touch adult to get attention and assistance) to reestablish preferred activity or to obtain desired objects?

B. Does the student attempt a new socially directed behavior if the first one doesn't work? (e.g., touch the adult if just looking doesn't work)?

COMMUNICATION STRAND II: USE OF SOCIALLY DIRECTED BEHAVIOR TO INFLUENCE THE ENVIRONMENT

Context: (1) Adult-student (a) Play/leisure/recess
Activity: Learning to "request" activities on the playground

Procedure: On the playground during recess, observe your student to see which activity interests him. Individual activities provide various opportunities for communicative interaction and instruction, whether it be the junglegym , swing set or seesaw. In order to encourage socially directed responses from your student, try some of the following activities:

A) Junglegym: Interrupt student's play on junglegym. Through shaping and prompting procedures teach your student to indicate to you in some way that he wants to continue "up" or "down" on the junglegym. Do not allow him to do so until an approximation of a verbal, vocal or nonverbal "request" is observed; e.g., the student may point up or down or gaze shift from you to desired location, etc.

B) Swings: Use shaping procedures to teach your student to communicate that he wants to continue swinging when you stop his activity. Again, gestures or gaze shifting may be adequate to express this "request".

C) Seesaw: Sit with your student on the seesaw. After establishing the up and down movement, stop the seesaw and wait for the student to "request" continuation. Gestures or gaze shift may be appropriate for nonverbal students.

Variation on procedure: One variation could be to use this activity with a normal or higher functioning peer model. Another variation could be to have the student request a change of activity after using one piece of playground equipment for awhile. Student can gaze shift or point to new activity.

Data collection: Take occurrence/nonoccurrence data on spontaneous "requests" (for activity to continue) in each activity for the first ten trials per daily recess session.

Context: (1) Adult-student (b) Meal time/circle time
Activity: "Requesting" food items at snack time

Procedure: During snack time give student pieces of sandwich (or other food item) one at a time. Next, interrupt the sequence of events, witholding the next piece. Teach your student to tap you or point to desired food item. Wait a few minutes before prompting in any way, to allow the possibility of a spontaneous "request". Prompt by holding up food and modeling a tapping or pointing response. Serve pieces of snack for modeling correct response. Eventually only serve pieces of snack upon spontaneous "request".

Variation on procedure: Teach your student a "protest" response by offering him a non-preferred food item. Student should look away or push your hand away to communicate rejection of the item.

Data collection: Record frequency of spontaneous requests during first ten minutes (time sample) of snack. Also record frequency and type of prompt used; e.g., holding up food, verbal prompts, modeling, etc.

Curriculm Strand II

Context: (1) Adult-student (c) Community
Activity: Learning to make "requests" during a neighborhood walk

Procedure: Take your student on a walk to a desirable place each day (e.g., the candy store, city park, etc.). After a week or two of going to the candy store together, implement instruction. Prevent your student from crossing the street until he points, gaze shifts or pulls your hand to go. Upon an approximation of this response, continue your walk. Do this at every crosswalk along the way. If no approximation occurs, shape a response by modeling one or physically prompting (only if necessary). Eventually fade all prompts.

Variation on procedure: Rather than stopping at crosswalks, take your student's hand, stop along the way and turn around, attempting to return to school. Have your student redirect you by pulling your hand and gaze shifting in desired direction. There may be opportunities to teach the student to protest as well; for example, he could stop and refuse to walk back to school.

Data collection: Record occurrence/nonoccurrence data for spontaneous "requests"; e.g., a student may indicate that he wants to continue the walk by either pulling hand, gaze shifting or pointing.

Context: (2) Student-student (a) Play/leisure/recess
Activity: "Requesting" music and dancing with a peer

Procedure: Pair your student with a highly responsive peer tutor. During leisure or recess time each day, get out the phonograph and some records for your peer dyad to use. The peer tutor should perform the same chain of events daily. This might include: 1) opening lid on phonograph, 2) selecting record, 3) putting record on phonograph, 4) putting "arm" on record, 5) dancing w/student. The peer tutor should have the student observe and assist him daily. After the routine is established, the peer tutor should stop and wait during the activity and require that the student touch him, gaze shift or point to record player in order to continue the sequence of events; shape response, prompt and fade prompts as necessary. Only utilize this activity with a student who enjoys dancing and music.

Variation on procedure: The peer tutor might purposely fail to respond to the student's initial "request" (e.g., touch) and wait for a new socially directed behavior (e.g., vocalization). The objective is to teach the student to try a repair strategy when his first communicative attempt fails.

Data Collection: Count occurrence/nonoccurrence data on spontaneous "requests". Also record frequency and type of prompt used, i.e., modeling, gesturing, etc.

Context: (2) Student-student (b) Meal time/circle time
Activity: "Requesting" grooming articles after snack

Procedure: Have your target student paired with a normal or communicatively higher functioning peer. Follow a specific routine each day after snack time or lunch time. When the student finishes his meal he should be required to accompany his "normal" peer model and engage in the following activities: 1) toileting, 2) handwashing, 3) toothbrushing, 4) hairbrushing. The peer model should assist the target student daily through sequence of behaviors, shaping and prompting as necessary. Every day the student should be allowed to go outside and play contingent upon completion of four grooming routines. After establishing this routine, have the peer tutor hold on to grooming articles rather than allowing the target student free access to them. The student must look at peer tutor and/or vocalize in order to receive grooming article to continue routine. (Note: Emphasis of this activity is placed on "request" behavior, rather than on self-care skills). The peer tutor may also teach the student another socially directed behavior by not responding when the target student vocalizes, and waiting for an additional behavior such as a pointing response.

Variation on procedure: An activity that might be conducted at home by the parents would be to implement a dressing routine in the morning in which the student must request clothes items (after routine is set) before eating breakfast.

Data collection: Record occurrence/nonoccurrence data on spontaneous requests for grooming articles. Also record frequency and type of prompt needed per trial.

Context: (2) Student-student (c) Community
Activity: "Requesting" activities in the library

Procedure: Have your target student paired with a higher functioning peer model for this trip to the library. The dyad should browse around the library looking at picture books, children's magazines and other reading materials. The target student should be allowed to lead whenever possible and direct his peer. After a week or two of following this procedure and the ritual of events is established, have peer model violate the student's expectations by preventing him from walking around, looking at books or pulling them from shelves. The student should vocalize, point or gaze shift from the peer model to the books in order to be allowed to continue in the library; shape and prompt as necessary. Other situations for socially directing a peer can be structured in the library as well; e.g., the student can request help opening doors, finding the bathroom, or playing with puppets. The student should be required to approximate a "requesting" behavior in all of these situations.

Variation on procedure: The peer model can teach the target student to attempt a new socially directed behavior by failing to respond to the student's initial "request" (e.g., a gaze shift). The objective is to teach the student to try a new behavior (e.g., a vocalization) as a repair strategy when his first communicative attempt fails.

Data collection: Record occurrence/nonoccurrence data on spontaneous "requests", indicating the particular communicative means (e.g., gaze shifts, touches or vocalizations) used. Record frequency and type of prompts used.

Curriculum Strand II

Context: (3) Group (a) Play/leisure/recess
Activity: "Requesting" assistance from adults or peers during a group game

Procedure: Hide a number of tightly closed transparent jars or tupperware containers filled with candy, raisins and other preferred edibles. Hide these containers around the room. Show the students a container, and then model searching for one and finding it. Have students walk around the room and find containers. In order to get the container open a student must request assistance by approaching, touching, or looking at you and then by looking at the object (gaze shift), or by offering the object.

Variation on procedure: Teach the students to "take turns" (these students may not have mastered a simple turntaking concept so this can be prompted). Have student ask their peers for assistance if applicable.

Data collection: Record occurrence/nonoccurrrence data on spontaneous "requests" for assistance after locating jar or container. Also, you may want to take frequency data on aberrant behaviors (e.g., tantrums) at this time. When an appropriate "requesting" response is learned, the need for aberrant behavior may decrease.

Context: (3) Group (b) Meal time/circle time
Activity: "Requesting" assistance during snack preparation

Procedure: Have a part of your school day structured so that each day snack time follows a certain activity (e.g. group play time). Teach your student that after clearing up his blocks or other toys at the play corner, she should go to get cups and a pitcher of juice to serve snack to the group. Follow this ritual daily, requiring your target student to serve snack to her peers. After a week or so following the same routine, disrupt her expectations by having items missing from the snack preparation area. Wait for your student to communicate in some way that the items are missing. Communicative means may appear in the form of a vocalization, gesture or point, or gaze shifting from teacher to snack preparation area. Shape one or more of these behaviors by modeling or using gestural prompts as needed. If aberrant behavior occurs due to the change in the expected routine, wait until the behavior has ceased and prompt her to "request" assistance.

Variation on procedure: Rather than serving snack each day, your student can clear the table after snack. Follow a ritual each day whereby you require her to clear the table when finished. When the routine is set, fail to prompt her one day and wait for her initiation. Use modeling or gestural prompts as needed.

Data collection: Record occurrence/nonoccurrence data on spontaneous attempts to communicate that items are missing for each daily session. Also record frequency and type of prompts needed per session.

Curriculum Strand II

Context: (3) Group (c) Community
Activity: "Requesting" food treats at sporting events

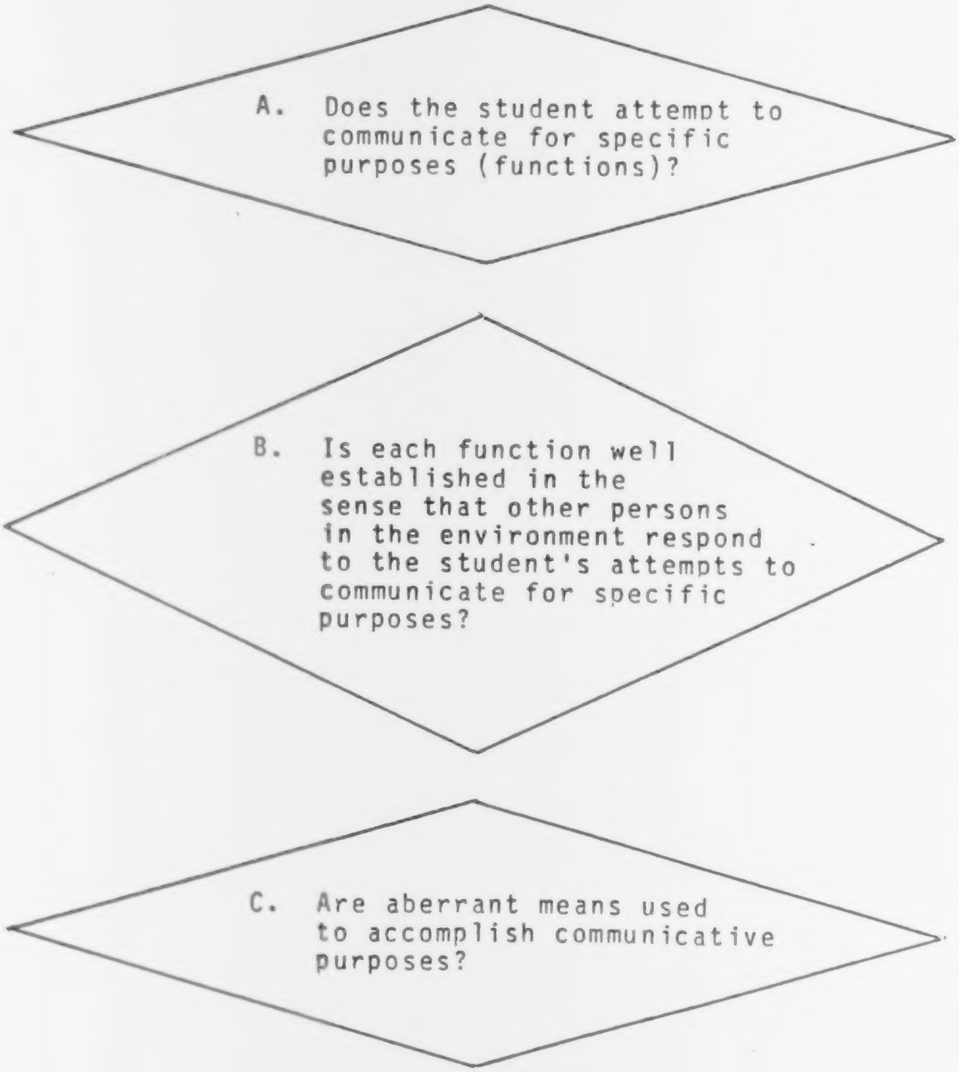
Procedure: Take your group to a spectator sport in the community (e.g. little league baseball game, basketball game, dog races, etc.). Bring the group over to the refreshment stand. Wait and require that students vocalize or reach toward desired food object in order to obtain it (shape and prompt as necessary). Once the student has communicated his wants, help him pay for his treats. Hold all the candy during the sporting event. Students must vocalize, look at, or touch you in order to get another piece of candy.

Variation on procedure: Teach the student to attempt a new socially directed behavior when his initial attempt is unsuccessful. Don't respond to the student's first "request," but wait for another response, such as a gaze shift, pulling your hand, verbalizing or signing. Only then give him the treats.

Data collection: Record occurrence/nonoccurrence data on spontaneous "requests" within first five minutes of session.

COMMUNICATION CURRICULUM STRAND III: COMMUNICATION FOR SPECIFIC FUNCTIONS

Goal: To establish functional communication skills.



A. Does the student attempt to communicate for specific purposes (functions)?

B. Is each function well established in the sense that other persons in the environment respond to the student's attempts to communicate for specific purposes?

C. Are aberrant means used to accomplish communicative purposes?

D. Are means sufficient to accomplish communicative purposes for the student?

E. Does the student need to learn additional basic communicative functions?

COMMUNICATION CURRICULUM STRAND III: COMMUNICATION FOR SPECIFIC FUNCTIONS

Context: (1) Adult-student (a) Play/leisure/recess
Activity: Object preferences: Opportunities for making requests

Procedure: Prior to the onset of this activity the teacher should sample the student's preferences for materials, keeping in mind the rapidity with which preferences change hourly and daily. After obtaining a representative sample of preferred materials, the teacher will arrange the environment to provide opportunities for the student to request and protest. This may be accomplished by putting two or three of the student's preferred materials on a shelf out of the student's reach but within her view. The idea here is to set the stage for the student to enlist the adult's cooperation in getting her needs met. The teacher should set the demands of the activity according to the student's means and level of communication. For instance, the teacher may require the student to get her attention using a particular set of means, perhaps gaze and vocalization. The teacher may then require the student to use another set of means to request the object, for example coordination of gaze shift, point, and vocalization.

Variation on procedure: 1) The teacher may also wish to intersperse opportunities for protest training by responding incorrectly to the student's request and requiring the student to appropriately protest and "repair" his request. 2) This context could also provide opportunities for establishment of a comment function. For example, broken or damaged duplicates of the student's preferred materials could be offered to the student. Given a broken toy, the student may be required to comment by signing or saying "broken."

Data collection: Collect data on type and frequency of functions (e.g., protest, request) and means (e.g., gaze and vocalization), and level of prompting used (e.g., time delay, gesture, physical, verbal). Record this data every other day when the student requests items for free play time.

Context: (1) Adult-student (b) Meal time/circle time
Activity: Request for interaction

Procedure: Prior to the onset of the activity the teacher should sample the types of tactile/social events the student likes; e.g., tickling, monster man, etc. For this activity the teacher will need to establish a routine which the student must request in order to be tickled, played with, etc. This request can take any number of different forms depending upon the student's means of communication; e.g., reach and gaze shift, gesture and vocalize. At first the teacher will want to shape and reinforce all requests. However, once the student requests interaction and her means are effective, the teacher could then shape the request so that it occurs within acceptable time periods; for example, the student's requests for interaction might be reinforced when it is her turn for teacher attention, rather than during another student's turn or during another activity. Multiple opportunities for requests are available in the classroom. For example, the student could be given choices regarding preferred events, like a tickle, vibration, or a hug. So if the student points to the vibrator first, the teacher could apply the vibrator for a few minutes and then offer the three items again so that the student can select another preferred event. This opportunity for the selection of a new event can be presented numerous times. A variety of activities is suggested to prevent boredom and to provide multiple opportunities for choice-making and for requests.

Variation on procedure: This context can provide opportunities for multiple goals, for instance, protest training, request for assistance, comment training. In fact interspersing targets throughout the activity will likely contribute to development of some versatility in the student's communication. For example, after giving the student a choice between two preferred activities and delivering the chosen one, the teacher might present an activity which the student does not like. An appropriate protest response can be shaped, modeled, or prompted. Similarly, the teacher might intersperse opportunities for commenting, for example by introducing a kaleidoscope, a funny hat, a funny face, etc. This activity could easily be expanded to a group context with each student requesting preferred social games.

Data Collection: Record occurrence/nonoccurrence of functions, i.e., request for interaction, protest, etc. Note type of means used as well as level of prompting. Collect this data everyday during circle time interactions.

Context: (1) Adult-student (c) Community
Activity: Ordering food at a restaurant from a picture menu: Use of nonverbal communication and communicative repair

Procedure: The teacher will probably need to prepare a picture menu for this activity. Of course, original restaurant menus or reasonable facsimiles which feature pictures of food items are preferred. When given a cue to order, for example "What would you like to eat?", the student should indicate what she wants by pointing to it, and possibly by using gaze shift and vocalizing. Inclusion of communicative repair training could be accomplished by alternating pictures (on a teacher-made menu) so that a picture of an item is included which is not available in the restaurant, for example a box of raisins. Thus, the student will need to repair her request by choosing another item.

Variation on procedure: This activity may require some pre-training in a work time context. The teacher may need to train the student to respond to the cue, to demonstrate an effective means of request, and to gradually increase the interval between responding and reinforcement. Of course, increasing the interval between ordering and receiving food and fading prompts and reinforcement should be scheduled.

Data collection: Collect data during each trip to the restaurant on occurrence/nonoccurrence of nonverbal request behavior, repair and level of teacher prompting.

Context: (2) Student-student (a) Play/leisure/recess
Activity: Exchanging toys

Procedure: Prior to the onset of this activity, the teacher should sample the student's preferences for materials. Materials available for this activity should contain component or complementary parts or should otherwise encourage joint action, e.g., a box and bucket. The target student should be in possession of one set of these materials. For example, Sue might have the puzzle board while Ann has the puzzle pieces. A routine should be established in which the students request objects from each other. Effective requests in this context could take a number of different forms including pointing or vocalizations or a combination thereof. The peer can be cued by the teacher to respond to certain requests. In this way, an exchange of objects through offering and receiving can be established.

Variation on procedure: 1) The teacher might want to impose time limits to prevent monopoly of an item. This could be accomplished in a number of ways. For example, the teacher may want to set a three-minute eggtimer. Thus, each student would be given ample time to act on the object individually and would be given a clear cue to relinquish an item. Of course, the time interval should be faded when possible. 2) This context is highly conducive for protest training. For example, when the student grabs an object away from someone the teacher might intervene by modeling and prompting a more acceptable request. The teacher might want to shorten the timed interval (see

Variation 1) to one minute to avoid escalation of aberrant behavior.

Data collection: Collect data on occurrence/nonoccurrence of functions, e.g., requests for objects, protests, etc. Also collect data on effectiveness, occurrence/nonoccurrence, or frequency of means (e.g., point, verbalization, self-injury, etc.). In addition, record level of teacher prompting used. Data collection should be done during the first ten minutes of each play session.

Context: (3) Group (a) Play/leisure/recess
Activity: Exchanging materials: Opportunities for requesting from peers

Procedure: Prior to the onset of this activity, the teacher should sample the students' preferences for materials. At the onset of this activity, the teacher will distribute the materials so that no student has their own preferred item; e.g., John has Lisa's basketball, Lisa has Jan's hool-a-hoop and Janis has John's radio. The objective here is to have the students request items from each other. The teacher may find that the students do not initiate effective or socially acceptable request behavior in a group setting, although they may do so in a teacher-student context. The student-student interactions can be facilitated by prompting the holder of the desired item to respond to requests made by the student. The teacher may need to "shadow" the holder of the item while shaping the student to demonstrate an effective set of communicative means, e.g., prevent the holder from handing over the item until the student has pointed and gaze shifted.

Variation on procedure: 1) Put a student, instead of a teacher in charge of distributing materials as they are requested by individuals, instead of the teacher. 2) If students can match pictures with desired items, have them select a picture of their desired item and trade it for the real item. 3) A manageable ratio of students to teachers (perhaps three to two) is suggested so that opportunities for training are maximized.

Data collection: Collect data on type and frequency of communicative functions and means. Also record level of teacher prompting. Data should be collected at the beginning of recess on every other day.

Context: (3) Group (b) Meal time/circle time
Activity: Shared meal preparation

Procedure: Prior to snack or lunch, each student should be assigned to a task and paired with a partner. The tasks should involve the preparation of some small quantity of food or drink. It may be preferred that the students master completion of the task independently prior to this activity. Pairing students who are adept at the task will minimize direct teacher instruction and facilitate reliance between students. The teachers should stage the activity so that responsibilities are shared, or at least distributed in a way that facilitates interaction and provides oportunities for requesting and protesting. For instance, if a dyad or triad of students is to prepare a quart of orange juice, the teacher might suggest tht Mary gather all the items with Ed's assistance. Thus, Ed might indicate the need for a pitcher and request Mary to retrieve the pitcher. Also, by varying the assignment of tasks and partners daily or bi-weekly, generalization as well as accommodation is encouraged. The premise that it is the "teacher's time to rest" will be useful only if the students perceive that adult involvement is minimal and rely on their means of communication and peers for assistance. This situation could be fostered by the teacher's redirection of students' requests for assistance, e.g., "I don't know where the yellow plate is, ask Tom - maybe he knows". Appropriate requests for assistance, protests, etc. should ideally be reinforced. In cases where the student's partner is not responsive, teacher modeling, prompting and reinforcement will be required. For example, a teacher who observes a student use an appropriate means of request should socially reinforce the occurrence immediately, rather than allowing the response to go unnoticed. If a communicative repair is a target, the teacher might let the student make repeated requests before prompting the partner to deliver the item.

Variation on procedure: Assign preparation for various routines to pairs or groups of students. For example, Ed and Mary could be responsible for getting the materials for music time, while John and Tom might be responsible for getting art time ready. Reliance on peers and relative independence from adult direction is the goal. It is likely that the students will either have to be trained or already familiar with the routine.

Data collection: Record type, frequency, and effectiveness of means used. Also record type and frequency of functions exhibited, and level of teacher prompting. Collect data during the first ten minutes of the snack preparation activity each day.

Context: (2) Student-student (b) Meal time/circle time
Activity: Selecting snack and accommodating to other's requests

Procedure: This activity may require a high functioning peer to act as snack server. Snack should be prepared so that the students have a variety of items to select from. For example, different types of liquids such as milk, juice, and water, and a variety of foods, perhaps an apple, cookies, raisins, peanuts, and crackers with an assortment of jelly, are made available. The students should initiate requests for food by gaining the attention of the snack server and requesting a drink or some food. Once the student has gained the snack server's attention, the snack server should present the desired item, either the juice or food, to the student. The snack server could accomplish this by putting the juice or food within the student's view while labeling the choices or by presenting a "menu" where the names and pictures of the items are presented. The student should then indicate which ones she would like. The snack server should be trained to be receptive to the student's requests and should be given teacher guidance regarding the kind of requests to be reinforced. For example, baseline observations may show that a student vocalizes and taps the snack server on the shoulder to gain her attention. When selecting a food item, the student will first try to grab it; if she can't get it, she will often throw her cup. With the teacher's guidance, the snack server can be trained to attend to the student's vocalization as a request for attention, to keep the food out of the student's reach to prevent grabbing, and to reinforce coordinated reaching and vocalizing.

Variation on procedure: 1) The whole range of communicative means can be targeted for this activity. As such, this activity should provide an excellent context for generalization of communication skills. 2) Additional functions could also be taught or maintained within this context, such as the protest and commenting functions. As in other activities, offering the student undesirable items will likely prove sufficient antecedents for student protest. The snack server should adjust his behavior accordingly.

Data collection: Collect data on type and frequency of means used, type and frequency of functions, and level of prompting used by snack server and by teacher. Collect this data during every other snack time.

Context: (2) Student-student (c) Community
Activity: Laundromat: Generalizing functions and means in a cooperative context

Procedure: The requirements of this activity will depend upon the functioning level of the student, especially in the area of living skills. The teacher should adjust the task requirements accordingly. The students should be given two wash loads of clothes, a box of detergent and a set of hangers. If possible, the students should be required to sort the clothes as necessary, e.g., color and white. During this time the students should be trained to request items that are out of reach and to appropriately protest when her partner hands her a wrong or undesirable item. Having sorted the clothes, the students will then load the clothes into the washing machines, measure the detergent, use the detergent properly and set the machine cycle. Again, the students should be trained to request assistance from each other, as well as to appropriately protest. For example, the student will need to request setting the machine cycle and should be taught to request assistance from her student partner. Once washed, the clothes should be loaded into dryers, a situation which will again provide numerous opportunities for establishing and generalizing efficient communicative functions and means. For instance, the student may need to request change for the dryer or may need assistance in obtaining change from a change machine.

Variation on procedure: Having the students monitor the dryness of the clothes will provide opportunities for establishment or generalization of the comment function. For example, the teacher may have a student open the dryer after ten minutes and indicate the state of the clothes, e.g., "wet," or this could be indicated nonverbally by pointing to the dryer dial or putting the clothes back in the dryer, looking from the teacher to the clothes. Folding and hanging clothes will also provide opportunities for student requests for cooperation, e.g., folding sheets.

Data collection: The teacher may want to task analyze the activity into four or five major components and then monitor the type and frequency of communicative functions and means, and level of prompting. Data should be collected during each trip to the laundromat.

Curriculum Strand III

Context: (3) Group (c) Community
Activity: Preparation for swimming

Procedure: Establish a routine in which the students prepare for a swimming trip by collecting swim suits, towels, lunches, thongs, etc. The students may be aware that after their bi-weekly music session they go swimming. At the end of the music session, the teacher may give the typical cue, e.g., "it's time for swimming," but then wait and fail to prepare for swimming. The teacher should be responsive to the student's attempts to direct her to prepare for the activity. It is likely that a shaping procedure will be useful here. For example, the teacher might attend to any attempts to request objects or assistance and then later attend to approximations of more appropriate means. The teacher could also easily intersperse opportunities for protest training. For instance, after a student has requested her blue swimsuit, the teacher might give her Tim's red swim trunks or she might switch lunches, etc. It is important here that each student for which this activity is relevant be given opportunities to direct the teacher. It may be desirable to alternate which student directs the teacher on a daily basis.

Variation on procedure: Have students direct each other. Pick a "monitor" and have the group interact directly with him when requesting objects, when requesting assistance, or when protesting.

Data collection: Collect data on type and frequency of communicative functions and means every time the students prepare for a swimming trip. Record level of prompting as well.

COMMUNICATION CURRICULUM STRAND IV: EXPANSION OF COMMUNICATIVE FUNCTIONS

Goal: To communicate a variety of meanings through verbal/nonverbal expressions.

A. Does student expand upon basic communication by expressing various categories of meaning other than just basic requests, protests, and commenting/declaring responses?

B. Are the categories of meaning expressed through coordinated communicative means?

C. Does the student need to learn additional categories of meaning?

Context: (1) Adult-student (a) Play/leisure/recess
Activity: Labeling toys

Procedure: Have your student indicate which toys he prefers by observing his interactions with the toys in the play corner. Use these toys in your activity. Have all toys out of reach of the student. When the student shows some sort of request for a toy, i.e., pointing, gaze shifting or grabbing a toy, wait for a verbal request before responding, e.g., "balloon." Demonstrate the interaction with a more verbal peer. Use prompts if necessary. Allow him to play with the toy for a limited time upon an approximation of the one-word label. Shape the response by expecting more of an intelligible one-word utterance before allowing him to play. Fade any prompts.

Variation on procedure: Follow this routine daily until the student can label many of his favorite toys. Now when the student says "ball" refuse to give it to him and say "what?" Do this to facilitate a repair strategy in which the student is required to point to the ball, look from you to the ball and verbalize his request.

Data collection: Record occurrence/nonoccurrence data on each target label of toy items during alternate play sessions.

Context: (1) Adult-student (b) Meal time/circle time
Activity: Meal preparation: Learning a variety of one-word meanings

Procedure: The object of this activity is to teach the student to use and respond to simple utterances which indicate various categories of meaning related to activities performed by the student (e.g., actions, agents, performatives, indicatives, locatives; (see decision model). This can be carried out in a variety of meal preparation tasks such as making sandwiches, orange juice, or snacks. For example, while making nachos the student can be asked to follow instructions such as (1) "open" the tortilla bag, (2) take "out" individual tortillas, (3) put the tortillas "on" the counter, (4) "cut" the cheese "over" the tortillas, (5) "open" the salsa can, (6) "spread" the salsa "over" the cheese, and so on for all the steps until they "serve" the nachos to peers. Production of action labels can be developed by asking "What are your doing?" or, while the teacher is performing the action, she asks "What am I doing?" In this way the student can learn to attend to both their own and another person's actions. Correct and incorrect responses for both the receptive and expressive training activities should be followed by praise and other positive consequences (if needed).

Variation on procedure: For students who are lacking in non-verbal communication skills such as gaze shifts, pointing behavior, or gesturing, these skills may be taught concurrently with the verbal training. Other variations might include having the student run through an obstacle course of different activities. They might be instructed to "run," "jump," or "climb," for example, and then asked to tell what they are doing at each station.

Data collection: For students who are being trained in both non-verbal and verbal communication skills, data should be kept on the correctness of each utterance and the occurrence/nonoccurrence of non-verbal skills (i.e., pointing, gestures, gaze shift). Data can also be kept, perhaps anecdotally, on the appropriateness of the student's coordination of behaviors (e.g., saying "open" while looking back and forth from the bag or container to the teacher). Data for students who need only the verbal training can be collected for the occurrence/nonoccurrence and the correctness of the utterance (i.e., was an utterance used at an appropriate time?). Collect data during each meal preparation activity.

Context: (1) Adult-student (c) Community
Activity: Indicating objects/events

Procedure: Indicatives are utterances that call attention to objects. For example, saying "airplane" while watching and perhaps pointing to an overflying aircraft. Indicatives play a role in the student's later ability to maintain and expand communicative interactions. For the receptive component of this training, while the teacher and student are walking through the community, the teacher should take advantage of opportunities to say something about the different events and things in the environment. This might be done by pointing to a flower and saying "daisy" or "pretty." The teacher should look to see if the student then attends to the object. Expressive use of indicatives can be taught by asking the student "What is that?" If the student replies by saying "daisy" or "pretty," and/or pointing, praise them. If the student does not respond apropriately, repeat the trial. After the third trial the teacher might want to point out another object or wait and say something different about it. The teacher may choose to ignore all statements that are not coordinated with a point, gesture, gaze shift, etc., depending on the objectives for that particular student.

Variation on procedure: Training might be initially conducted in a highly familiar environment where the student knows the names for many of the objects already. After he has learned to consistently respond to the teacher's cues, new objects may be introduced to the environment, or training can shift to a new location.

Data collection: Data should be kept during each walk on the number of prompted, unprompted, coordinated and uncoordinated utterances made by the student. It would also be helpful to keep track of the different environments in which the training is most and least effective. A simple frequency count may be kept on the number and appropriateness of utterances.

Context: (2) Student-student (a) Play/leisure/recess
Activity: The use of "action" words in a leisure activity

Procedure: Your student should be paired with a nonhandicapped peer for this activity. Display a number of different pictures which portray a number of different verbs (e.g., running, jumping, drinking, swinging, sitting, playing, hugging). Have the dyad sit on the floor facing each other. Prompt each student to take turns selecting a picture card. Students take turns labeling the verbs. (Peer tutor should prompt if necessary). After labeling the action picture, students should then role play the action in an appropriate context; e.g., jumping on a trampoline, drinking a glass of juice, going outside and swinging on a swing, etc.) Choose verbs that represent enjoyable activities for the student.

Variation on procedure: Act out action words, e.g., "riding" on a bicycle, and ask student "What am I doing?" If he answers correctly, allow him a turn to ride, or ask "What do you want to do?" Or, "What is Johnny doing?" (pointing to a classmate). Shape and prompt responses. Fade prompts.

Data collection: Record occurrence/nonoccurrence data on correct receptive and expressive verb usage. Also record frequency and type of prompts used. Data should be collected during each session.

Context: (2) Student-student (b) Meal time/circle time
Activity: Encouraging one-word speech during snack time

Procedure: Set up this activity so that your student is paired with a highly responsive peer model. The aim of this activity is to teach the receptive understanding of verbs regularly heard in a snack preparation activity. Through the activity, the peer model should use one word in order to request the target student to participate in the activity. Possible target words are stir, mix, eat, drink, pour, cut, etc.

Variation on procedure: Follow the same procedure, except this time require expressive one-word speech from the student. This can be done by having the peer tutor ask, "What do you want to do?" or What am I doing?" or "What are you doing?"

Data collection: Record occurrence/nonoccurrence of receptive and expressive use of the verbs. The first ten minutes of each session is sufficient for data collection. Also record the frequency and type of prompts needed.

Context: (1) Student-student (c) Community
Activity: Learning action words in a community park

Procedure: Carry out this activity at a local park where there is a variety of climbing, swinging, and sliding equipment. Have two students engage in an activity like "Simon Says" where they direct each other to climb, crawl, walk, run, hang, etc., on, under, around, and over a variety of obstacles.

This training might be facilitated by first having the students perform a number of rote routines that have been trained in a teacher-student context, substituting a peer for the teacher. Have a student direct his partner to perform a particular action (e.g., crawl, or go under) while standing in front of the monkey bars. (Note: The activity might be facilitated by having the teacher whisper a direction to the directing peer and having him repeat it to the other student.)

Appropriate directions by the one student and appropriate responses by the other student should be praised and followed by a positive consequence (such as a food item). The students should switch roles after every trial. The teacher can foster the students' interest in the game by tickling them often or "rough housing" with them following appropriate responses.

Variations of procedure: One variation is to have the directing student praise and hand out food items after his peer partner responds appropriately. The rewarding student should then be immediately praised as well.

Another variation is to actually set up a "Simon Says" game where the students switch roles often.

Data collection: Collect data on the appropriateness of the students' directions and responses to directions. A frequency count can be kept on this data for the first ten or twenty trials of a session.

Curriculum Strand IV

Context: (3) Group (a) Play/leisure/recess
Activity: Learning action and agent words at recess

Procedure: The playground at recess time is an excellent opportunity for communication training. Teach the children in the group to express what they or their peers are doing on the playground. Possible target words are run, jump, go, slide, play, climb, swing. Interrupt their playing until a verbal approximation is produced by the student.

Variation on procedure: Rather than asking the children what their peers are doing on the playground, ask them who is doing it. Point to a child and ask, "Who is that?" or "Who is running?" Student should reply with the peer's name.

Data collection: Record occurrence/nonoccurrence of appropriate use of verbs in the first ten minutes of recess daily.

Context: (3) Group (b) Meal time/circle time
Activity: Playing "charades" using action words

Procedure: "Charades" can be played by the students during a group circle time. When a student performs an action, such as jumping up and down, the other students call out what that student is doing; in this example, "hopping." Then it's the turn of the student who labeled the action appropriately to perform an action.

Variation on procedure: This "charades" game can be varied to suit the needs of individual students. For example, a nonhandicapped peer can direct a target student to perform certain actions to develop his comprehension of action words. For another student, location words may be acted out or he may be asked to follow directions from the nonhandicapped peer which incorporate location words.

Data collection: Frequency data should be recorded on number of action words produced or comprehended appropriately by the target student each time the game is played.

Curriculum Strand IV

Context: (3) Group (b) Meal time/circle time
Activity: Learning communicative repair/revision strategies

Procedure: Have a group of nonhandicapped peers join your students in this circle time activity. Students should sit on the floor in a circle. Students should take turns requesting objects with one-word labels. Turntaking may need to be verbally prompted (e.g., "it's Billy's turn") by the teacher and faded. The game would operate as follows: The first student requests "legos" and the next student (nonhandicapped peer) "mistakenly" brings the student a doll. The target student should be taught to use a communicative repair strategy to request the appropriate item. For example, she could say "no" and repeat or modify her verbal request in addition to pointing to the legos. The peer tutor or teacher should model this response and prompt if necessary.

Variation on procedure: Follow the same procedure daily at snack time, e.g., when a student asks for juice, hand him a cracker instead. The student should be taught to say "no" and repeat or modify his request. For non-verbal students, pushing food away, pointing and gaze shifting can be used until the correct item is offered.

Data collection: Record occurrence/nonoccurrence of spontaneous repair strategies. You may be teaching this skill to a few students in the group simultaneously. Also record frequency and type of prompts used in the first ten minutes of the group activity.

Context: (3) Group (c) Community
Activity: Learning location words in the grocery store

Procedure: Take the group to the grocery store to teach receptive understanding of locatives. Give commands such as "on," "under," "in,", and "down," to describe what students should do with grocery items in the store. Choose locatives that would be appropriate in the grocery store; e.g., point to an apple and hold out a plastic bag and say "put in" or while standing at the check-out counter point to the counter and hand student the butter and say "on the counter." Shape each response and prompt if necessary. Be sure to fade prompts.

Variation on procedure: Teach expressive use of locatives in the same context by asking "What do you want to do?" "Where are the cookies?" or "What am I doing?" Student should reply with one-word utterance, i.e., "on," "in," "under," etc.

Data Collection: Record occurrence/nonoccurrence of receptive and expressive use of each targeted locative during each trip to the grocery store. Also record type and frequency of prompts used.

COMMUNICATION STRAND V: COMBINED MEANINGS TO COMMUNICATE

Goal: To communicate combined meanings through verbal/nonverbal expressions.

A. Does student combine two categories of meaning when communicating?

B. Are the categories of combined meaning expressed through coordinated communicative means?

COMMUNICATION CURRICULUM STRAND V: COMBINED MEANINGS TO COMMUNICATE

Context: (1) Adult-student (a) Play/leisure/recess
Activity: Use of combined meanings during play activities

Procedure: The adult plays on the floor with student using toy vehicles and toy people. While manipulating the toys the teacher models agent-action verbalizations such as "girl runs" or "man drives". The adult then asks "What does the (girl, man) do?" and prompts the student to imitate her model. A limited set of particular agent-action utterances should be modeled initially.

Variation on procedure: 1) A different type of construction can be introduced once the student accomplishes predetermined criterion levels of performance. For example, action-object utterances could be modeled such as "push car" or "eat dinner". Again, the initial set of particular utterances should be restricted to a certain number so the student is not required to learn too many specific utterances at once. 2) Comprehension of utterances can be further developed by having the student respond to instructions using particular construction types such as action-object. For example, the adult instructs the student to "drive truck" or "push wagon". 3) To modify this activity for use with older students, particular utterance types could be taught within the context of playground activities with peers. For example, a nonhandicapped peer who is assigned as the student's partner at recess could ask the student "What does (John) do on the bars?" An appropriate response might be "John climbs" (agent-action). 4) Another variation for older peers could be to look at pictures in magazines and talk about the various actions, etc., using the target utterance types.

Data collection: Collect data regarding the frequency of spontaneous appropriate utterances produced within each fifteen-minute play session.

Context: (1) Adult-student (b) Meal time/circle time
Activity: Use of combined meanings as communicative repair strategies

Procedure: During daily routines such as a meal time activity, change the usual routine so that the student's expectations are disrupted. For example, if a student usually requests the milk to pour after all the glasses are set on the table, give her a towel instead, contingent on the request. Then model a denial response for her to imitate as a repair strategy; e.g., "not towel". Another repair strategy might be the use of a question utterance such as "where milk?" The student should be required to combine nonverbal cues with her verbal utterance to clarify her intention; e.g., looking at the refrigerator as well as verbally asking about the milk. Model and/or shape nonverbal behaviors as necessary as well as verbal behaviors.

Variation on procedure: 1) Social routines can be disrupted as well as object-related routines. For example, if the teacher usually picks the student up and spins her in the air when the student approaches her with arms raised, the teacher can pretend to misunderstand the student's lifted arms and take her sweater off or put something in her raised hands. The student then must repair her strategy to make her request understood by revising or supplementing her initial request; e.g., saying "up" as well as lifting her arms. This repair strategy will need to be modeled and/or prompted at first. 2) Violations of the student's expectations can occur at various times of the day to facilitate generalization of repair strategies and to introduce more flexibility and diversity into the student's repertoire of responses.

Data collection: Each day during the regularly scheduled activity, record occurrence/nonoccurrence of the targeted repair behavior, e.g. a denial response or a question response. Also record the occurrence/nonoccurrence of coordinated nonverbal behaviors, such as a gaze shift or pointing.

Context: (1) Adult-student (c) Community
Activity: Use of question forms on a field trip

Procedure: During a beach field trip, facilitate generalization of the use of target utterance types. For example, point out objects of interest to the student (like a boat on the ocean, a pier, or some seaweed). Don't tell the student what the object is until she asks "What's that?" or hide an object and wait for her to ask "Where's shell?", depending on the particular question forms that have been objectives in the classroom. If necessary, shape and/or model reponses for the student in this novel environment.

Variation on procedure: To develop generalized use of coordinated means, require the student to use nonverbal means of expression in conjunction with verbal means. For example, if the student asks "Where shell?", but doesn't look at you, wait until she does look at you before responding, and then repeat her question looking back and forth from her to possible hiding places in the vicinity. Prompt and/or model this looking behavior with the verbal question for the student to imitate. Once she produces the verbal behavior coordinated with appropriate nonverbal behaviors, immediately find the shell and give it to her.

Data collection: At one-hour intervals during a field trip day, provide an opportunity for the student to produce target utterances by asking appropriate cue questions. Record occurrence/nonoccurrence of spontaneous correct utterances. At the end of the day, percentage of correct responses can be graphed. Record this data across all such generalization contexts.

Context: (2) Student-student (a) Play/leisure/recess
Activity: Use of recurrence and other utterance types during sand play with a peer

Procedure: Nonhandicapped peer and student should be given a variety of materials for sand play, such as a bucket and shovel, spoons and bowls. The nonhandicapped peer should be instructed ahead of time (or should have behavior modeled by a teacher initially) to interact with the student both verbally and nonverbally. For example, if utterances indicating recurrence are a goal, the nonhandicapped peer might give the student the shovel, point to the bucket and say "more sand". He then can prompt the student to put more sand in the bucket if necessary. Roles should be reversed eventually so that the student directs the nonhandicapped peer to get "more sand" both verbally and nonverbally. Again, responses may initially need to be modeled and/or shaped.

Variation on procedure: 1) This same activity could be used to work on other construction types such as agent-action or attribution. For example, the nonhandicapped peer might suggest "you dig" (agent-action), giving the student the shovel and pointing to the hole in the sand, looking from the student to the hole. 2) The student should be given the opportunity to direct other students or adults in other settings as well, and not just in play settings. For example, he could be taught to tell the teacher which rope he wants at recess, the "long" rope or the "short" rope, gesturing and looking towards the appropriate one as well as verbally telling her.

Data collection: During the last ten minutes of the session, collect frequency data regarding the student's spontaneous use of target utterances, such as those expressing recurrence. Also record the number of times the student responds appropriately to instructions of recurrence presented by the nonhandicapped peer. Graph production and comprehension data separately.

Context: (2) Student-student (b) Meal time/circle time
Activity: Use of agent-object utterances

Procedure: In a circle time setting, the student pretends to be the teacher. The use of particular utterance types by the student, in this case utterances which express agent-object relations, can be the objective. The student has a number of items to hand out to her peers for recess. As she hands them out, she indicates who gets what item, using agent-object utterances; e.g., "John ball", "Eric rope", and Shawn skates". Shape and/or model responses when the student has difficulty with utterances. If necessary, also shape and/or model coordination of appropriate nonverbal behaviors such as eye gaze shifts and offering of objects.

Variation on procedure: For students in the group, this could be an opportunity to use utterances which express denial. When receiving an item he doesn't want, a student can respond to the "teacher" student by saying "not rope" and hand it back to her.

Data collection: Record the frequency of appropriate agent-object utterances produced by the student across sessions. Data can be collected during alternate rather than consecutive sessions. Separately record the frequency of utterances coordinated with appropriate nonverbal behaviors. It may be useful to record the types of nonverbal behaviors used as well, such as eye gaze shifts or touching someone, so that the student's repertoire of nonverbal means can be expanded if it facilitates more effective communication.

Context: (2) Student-student (c) Community
Activity: Use of communicative repair/revision skills in a community setting

Procedures: During a field trip, a nonhandicapped peer at a fast food restaurant can help the target student order food. Before entering the restaurant, the nonhandicapped peer can ask the student what he wants to eat, naming some options. The nonhandicapped peer can be instructed ahead of time to "misunderstand" the student's initial requests, saying "Oh, you want a hot dog" when the student actually said "want hamburger". As a communicative repair strategy, the student then needs to shake his head "no" and reiterate his request, say "not hot dog--hamburger", or in some other way revise or repair his initial request.

Variation on procedure: After food has been bought, the student can be given the wrong items to again facilitate use of particular communicative strategies; e.g., denial responses, repeated or revised request responses, or a combination thereof.

Data collection: If the nonhandicapped peer is capable of doing so, have him record the student's use of specific utterances and nonverbal behavior in these situations. Otherwise, the teacher can stand nearby and do the recording. Because the number of opportunities for use of the target behaviors is limited in this situation, it is important to record a complete description of responses produced so as to capture the quality of the verbal and nonverbal communication. Record this data across all such incidental training contexts.

Context: (3) Group play (a) Play/leisure/recess
Activity: Use of attributes during a group game

Procedure: Set up "Mother, may I?" game in which the students take turns being "mother". The "mother" gives directions for the other students to follow using targeted attributes; e.g., "a big jump", "a fast roll". Responses may need to be modeled and/or prompted initially and should be kept to a limited set. New directions can be added as the students learn a set. All the students being directed by "mother" stand behind a line facing her at least ten feet away from her. If each one remembers to ask "Mother, may I?" (which may be a modified verbal or nonverbal signal, such as raising a hand), then they can move forward towards "mother" as directed. If they forget to ask for permission, they must return to the original starting line. In this game, include only those students who can understand the directions and who can learn the rules of the game. It may be necessary to include nonhandicaped peers. Be sure the student knows the movements used before the game is initiated, so that focus can be placed on teaching them the meaning of attributes throughout this game.

Variation on procedure: 1) The targeted attributes can be attached to a variety of movements so that the students learn the attributes separate from the movement and so that attribute learning is more generalized; e.g., "a little step", "a little jump", "a little roll", "a little crawl". Always use movements which are already familiar to the students. A student might be mainstreamed into a regular classroom P.E. session, learning to play this game with normal peers.

Data collection: Record the frequency and variety of appropriate utterances which express attribution used by the student when it is his turn to be "mother". Also record the frequency of occasions on which he correctly follows instructions given by other students. Collect this data during the first ten minutes of the game each time it is played.

Context: (3) Group (b) Meal time/circle time
Activity: Use of utterances which express attribution
in a group circle activity

Procedure: A group of students, including some nonhandicapped students, should sit in a circle on the floor. Have a large bag available containing a variety of "dress-up" clothing. Pass the bag around the circle and let each student choose one item to wear. Before a student is allowed to take an item from the bag, have him tell you whether he wants the "(blue) shirt" or the "(red) shirt". Be sure to include items in the bag which can be used to model pairs of attributes such as blue and red, or big and little or soft and hard, etc. When each student has selected something and puts it on, then he can approach another student and ask to wear his "little hat". The student wearing the little hat will then need to ask the first student if he can wear her "blue shirt". Responses may initially need to be modeled and/or shaped by nonhandicapped peers. The game can be continued until everyone gets a chance to wear a variety of dress-up clothing. (NOTE: It is important to be aware that abstract attribution concepts like color may be difficult to learn for some students. In such cases, incorporate concepts of attribution which are already familiar to them, e.g., concepts of size like big and little.)

Variation on procedure: 1) When the students become familiar with a particular set of clothing and attributes, introduce a new set of clothing which exhibits the same contrasting attributes to facilitate generalization of attribute comprehension and use. 2) Objects other than clothing, such as toys, can also be introduced as a way to facilitate generalization of attribution skills.

Data collection: Identify particular attribute objectives for individual students. During the last ten minutes of each "dress-up" game, record the frequency of spontaneous two-word utterances which express attribution.

Context: (3) Group (b) Meal time/circle time
Activity: Learning about different kinds of protest behaviors during snack time

Procedure: Protest behaviors can be used to express different meanings, including rejection, denial, and non-existence. For example, to teach rejection, the student might be given a choice of two food items in a group snack context. The teacher or student distributing food items could offer the target student the non-preferred item and wait for him to reject it. Possible rejection responses include "No, thank you" and pushing the item away, or saying "Not this" then the name of the desired item and reaching for it. Initially, such responses should be modeled and shaped.

To teach denial, the teacher might place a food item on the table and have the nonhandicapped peer eat it while she walks away to get other snack materials. When she returns to the table she can ask the target student, "Did you eat that cracker?" The target student should deny it, saying "not eat" and shaking his head, or "not me" and pointing to the peer. Responses should be modeled and shaped initially.

To teach non-existence, the target student could be taught to say "no more" or "all gone" when he has eaten all his food at snack time before he is allowed to leave the table for some free time.

Variation on procedure: These different kinds of protest can be taught in a variety of contexts throughout the day. For example, the student can reject a ball at recess (rejection), can deny that he took John's car during play time (denial) and can indicate to the teacher that his paint is gone during art time (non-existence).

Data collection: Collect frequency data on number and type of protest behaviors observed during every other fifteen-minute snack session. Depending on the competencies of the student, you may need to focus on one type of protest at a time. Also record occurrence/nonoccurrence of coordinated nonverbal behaviors (such as shaking his head or pushing items away).

Context: (3) Group (c) Community
Activity: Use of combined meanings on a barbecue outing

Procedure: During a field trip such as a barbecue at the park, facilitate generalized use of utterances which express non-existence for students who have already learned to produce such constructions in the classroom. For example, before the student can obtain another piece of watermelon or more soda pop, you might ask "What happened to your other coke?" as a cue for the student to respond "all gone coke" or "no more coke" (non-existence).

Variation on procedure: 1) To facilitate generalized use of two-word utterances which express location, students might be asked to help set up the table with barbecue items (food, utensils, etc.). Intermittently ask students questions regarding the location of various objects, e.g., "Where's the barbecue sauce?" to provide an opportunity for the student to respond "in bag." Be sure to ask questions of location which can be answered by the students using construction types learned in the classroom. (The construction "in bag" requires use of the preposition "in" and the object "bag".) 2) In both the above contexts, students can be required to coordinate verbal and nonverbal means to increase the effectiveness of their verbal messages. For example, the student who responds "in bag" might look from you to the bag, and then offer you the bag.

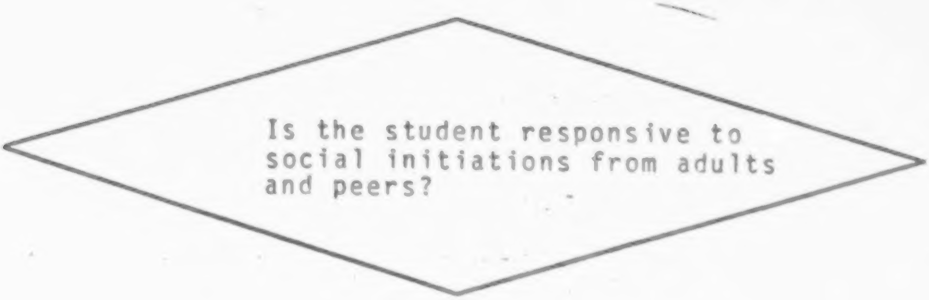
Data collection: Provide at least five opportunities for a particular utterance type during the field trip day. Record occurrence/nonoccurrence regarding spontaneous use of targeted utterance types and coordinated use of nonverbal behaviors (if the latter is part of the objective for a particular student). Graph percent of correct responses for that day based on the number of opportunities provided. Record this data across all such incidental training contexts.

Appendix B

Social Curriculum Activities

SOCIAL CURRICULUM STRAND I: RESPONSIVE

Goal: Responsiveness to social initiations by others


Is the student responsive to social initiations from adults and peers?

SOCIAL CURRICULUM STRAND I: RESPONSIVE

Context: (1) Adult-student (a) Play/leisure/recess
Activity: Child-directed play

Procedure: The purpose of this activity is to play with the student, maintaining a high degree of responsiveness to her behavior, even if it is not intentionally social behavior. After observing the student's isolate activity, the teacher should attempt to participate by imitating and elaborating on any appropriate material use or play behaviors the student demonstrates. No prompts, direct reinforcement or corrective feedback should be given if possible. Let the student "lead" the activity through her choices of materials, actions, and location for the activity.

Variation on procedure: If the student shows no appropriate play behavior try to indirectly prompt this by changing available materials to those which are easy to use appropriately - e.g., balls, or simple music instruments like a drum, triangle, tambourine. Directly prompt desired behaviors only as a last resort.

Data collection: Using the Social Interaction Observation Guide categories pause every minute during the play session and check off any school behaviors demonstrated by the student. At the end of the session, take a few minutes to record comments/anecdotal observations.

Context: (1) Adult-student (b) Meal time/circle time
Activity: Responding to offered food

Procedure: Sit next to the student during a snack time with several bite-sized pieces of a favorite snack. If the student doesn't turn his body/face toward you in anticipation of receiving the food, begin placing pieces in front of him one at a time until you think he is anticipating the next piece. Now delay the piece - wait for the student to turn slightly toward you or look toward you, then give the piece of food. Do this over several trials until the student consistently turns and/or looks toward you to get the next piece. If the student doesn't reach out to take each bite, shape this response. Begin by placing each bite in the student's hand. When he anticipates this, reach over with the next piece, but don't put it in his hand. Wait until he opens his hand or moves it toward the food - then give him that piece. Next time reach over with the food, but keep your hand a bit farther from his - wait for him to reach for it. Continue this process until he clearly reaches for each bite you offer. All three responses (body orientation, social gaze, reaching) should ultimately be shaped to occur together or in close sequence.

Variation on procedure: If the student doesn't spontaneously reorient (or gaze or reach) move the food across the student's line of vision and then toward your face. When he looks at you, reorients his body, or reaches - give the food. If this doesn't work try physical prompts (touching a shoulder, moving the head or hand) rather than verbal ones, and fade them as soon as possible.

Data collection: Record the number of observed social behaviors (body reorientation, social gaze, reaching) for the first five to ten trials each day.

Social Curriculum Strand I

Context: (1) Adult-student (c) Community
Activity: Receiving an order in a fast food restaurant

Procedure: Conduct the ordering and receiving of food in the same way each day in a fast food restaurant until the student is familiar with the sequence of events. When intervention is started, carry out the sequence as before, but ask the cashier to pause just before handing the food to the student, waiting until the student demonstrates some reaction to the situation (vocalization, reaching, etc.).

Variation on procedure: When the student responds consistently, model and prompt the student to offer the money before the food is handed to him. Prompt the cashier to extend her hand palm up in addition to setting the cost, and teach the student to respond to these cues.

Data collection: If possible, record the latency between the cashier's cue (grasps and holds out the bag of food) and the student's response (looks at or reorients toward cashier, reaches for bag). If this is not feasible, simply record whether the student did not respond (0) or successfully responded without direct prompt (+) each day. Be sure to indicate the type of prompt required.

Context: (2) Student-student (a) Play/leisure/recess
Activity: Play with developmentally younger nonhandicapped peer

Procedure: Set up regular dyadic play times with a responsive nonhandicapped peer who is developmentally younger than the target student. Prompt the nonhandicapped student to initiate play with the target student repeatedly by offering objects, imitating the student, or elaborating on what the student is doing. Look for body orientation, gazing, maintenance of proximity, receiving behaviors, etc. Use play activities familiar and easy for the target student and keep sessions to ten minutes or so.

Variation on procedure: If the adult must intervene to prompt social interaction between these students this should be done indirectly if possible, for example by providing a new material to play with or modeling a social activity such as seesaw or a ball rolling game with one of the students.

Data collection: Using a point sampling method (i.e., checking at the beginning of each of a series of time intervals) record the occurrence/nonoccurrence of responsive behaviors at least ten times throughout the session. Be sure to specify when you will check behaviors off beforehand, e.g., every ten seconds, or you'll have a hard time not checking just when you see the desired behavior!

Context: (2) Student-student (b) Meal time/circle time
Activity: Responding to a peer serving snack items

Procedure: Establish the serving routine by running the snack/meal time similarly each day - with a peer going from student to student to offer eating utensils, food, drinks, etc. When the routine is familiar to the student, have the peer serve the other students first, then move to within serving distance of the target student and pause. When the target student makes some response, for example if she turns her head or body or extends a hand, have the peer deliver the expected item.

Variation on procedure: If no response is forthcoming from the target student when the server delays, prompt the server to move the item past the face of the student, using a light touch if necessary to get the student to turn toward the server.

Data collection: Record the latency between the server's offering the item and the student's response, and the nature of the response (body orientation, reach, vocalization, gaze shift) each day if possible. Alternatively, record each day only whether the student responds or not, and record latency data once per week.

Context: (2) Student-student (c) Community
Activity: Responding to peer directives and "play organizers"

Procedure: This activity could be carried out in any community recreational setting appropriate to the age and interests of the student, which involves multiple student use of available equipment, games, materials, etc. First make a list of typical directives (e.g., "wait - its my turn") and play organizers (e.g., "let's go down the slide") likely to be used by nonhandicapped persons in that setting. Select one or more of each to begin instruction, prioritizing according to those most likely to be experienced as useful by the student. Each day you are in the setting, "role-play" each directive (organizer) with the student, slightly varying the situation each day as the student learns to respond correctly. Observe the student's performance after each day's role-play, and enlist the cooperation of a nonhandicapped person, if possible, to regularly provide the student with an opportunity to practice targeted skills.

Variation on procedure: If you have the regular cooperation of nonhandicapped peers, you may wish to have them provide instruction instead of relying on your role-play with the student. This will likely reduce any generalization problems, since the student will be learning skills in the same situations she needs to use them.

Data collection: Record the number of correct unprompted responses to targeted peer directives and play organizers during the last five minutes of each session. Collect this data at least once each week.

Context: (3) Group (a) Play/leisure/recess
Activity: Dodge ball

Procedure: Be careful with this one! You don't want to pair this social situation with getting hit hard by a ball! Have more advanced peers model first. Set up a circle of four-to-five students around a smaller group (three-to-four). The inside group dodges, while the outside students throw. Each time an outside student throws she must call out a student's name as the "target". When a student is hit, he goes to the outside group. This activity would be most appropriate for students who are socially "aware", but who choose not to be responsive (particularly to peers) most of the time. This would probably not be an appropriate activity for students just learning to be responsive to social cues, but is more appropriate for students who exhibit at least some social responsiveness.

Variation on procedure: A simple game enjoyed by many (particularly male) adolescents is "slap". Partner 1 holds his hands out (palms down) while partner 2 holds his hands underneath (palms up). The partner with hands on top tries to pull them away before partner 2 can flip his hand(s) over to slap the top hand(s) of partner 1. Play gently!

Data collection: Record the percent of trials (throws) to which the student shows some response (e.g., facial or body orientation). Differentiate responses to the social cue (name of person) and to the ball (i.e., avoidance).

Context: (3) Group (b) Meal time/circle time
Activity: Joining activity with peers

Procedure: This activity is aimed at teaching the student to respond to the social cues for initiation of a familiar group activity such as snack or recess time. Begin this intervention with an activity that occurs each day, and which the student enjoys. If you usually prompt the student to go to the activity continue to do so, but provide a reinforcing activity, object, or food as soon as she gets there. Don't make her wait at the table for juice - have it ready for her when she arrives. When the student is used to this, begin to fade your prompts, reducing their power (e.g., fade from physical to touch to verbal to pointing) and by using a delay technique. That is, give the regular cue for initiation of the activity and delay your specific prompts to the target student to see if she will initiate a response on her own. If so, you may wish to provide some positive feedback as the student moves toward the activity (however, this may disrupt the response for some students).

Variation on procedure: With some students, once you provide sufficient reinforcement for arriving at the group activity, you need not fade prompts - you can drop them immediately and simply wait for the correct response. Try this, if it works, great! If not, don't keep waiting, but use the prompting strategy.

Also, you may want to teach peers to carry out the prompting. You won't have as good control over what prompts are used, but this approach would have the dual benefits of building the intervention right into the classroom "ecology" and, at the same time, providing opportunities for peers to practice directing another person's behavior.

Data collection: Record number of unprompted correct responses each day. Use percent of trials if you provide multiple opportunities across settings/activities each day (and you should!).

Context: (3) Group (c) Community

Activity: Staying with a group

Procedure: Carry out this procedure in community situations familiar to the student and in which he is highly motivated to participate in the activity at hand, e.g., going to a restaurant, going swimming, attending a dance. Students who do not have this skill, i.e., those who don't spontaneously stay with a social group, are typically prompted to "stay with us" or led. Follow your typical procedure until you are almost to the door of the restaurant (swimming pool, theater), then stop all prompting and simply go on into the building. You may wish to have someone wait unobtrusively outside to monitor the student's response to this situation (and, if necessary, to prompt him to follow the group). When your student stays with the group consistently in these situations, gradually extend the time, distance, and variety of situations in which he is expected to stay with the group.

Variation on Procedure: If the student does not start to follow the group appropriately, you might have peers prompt him to stay close. This is really a substitute goal--teaching the student to respond to peers who are learning to direct someone's behavior. If your other students can perform this social/communicative task well, your student may learn to stay with the group without the procedure described above.

Data collection: Record the rate (# per minute) of prompts needed to maintain the student's proximity to the group in the targeted activity. Collect this data at least once per week.

SOCIAL STRAND II: JOINT ACTION

Goal: Participation in joint social activities

Does the student participate in joint activities with adults or peers (e.g., parallel play, group art activities, weeding a flower bed)?

SOCIAL CURRICULUM STRAND II: JOINT ACTION

Context: (1) Adult-student (a) Play/leisure/recess
Activity: Joint dress-up activity

Procedure: Have two sets of identical dress-up clothes available. The adult should sit on the floor near the target student with each of them having their own set of clothes. The adult should observe what the student chooses from the bag and follow his lead, selecting the same item. If the student puts on that piece of clothing, the adult should do so also, possibly calling the student's attention to herself. The adult should continue to play with the same items used by the student. When the student seems to be aware that the adult is following his lead, and is observing the adult some, the adult can try modeling a new behavior with an item of clothing. If the student then follows the lead of the adult and imitates this new behavior, the adult should hug the student or shake his hand or provide some other positive response, depending on what that particular student likes. Joint activity with the clothes items can continue. The objective is that the student observes the adult and sometimes imitates the adult, sharing a joint play space and identical materials.

Variation on procedure: The exchange of clothing through offering and receiving behaviors might also be an objective in this particular context. Through such behaviors, the student can learn to initiate and maintain social interactions.

Data collection: Frequency counts of the number of imitations as well as the duration of the imitative exchanges could be recorded and, if applicable, frequencies of offering/receiving behaviors. Also record number of times the student observes the adult. Collect data during the first ten minutes of each play session.

Context: (1) Adult-student (b) Meal time/circle time
Activity: Joint action with musical instruments

Procedure: Have a number of toy instruments all displayed in one area. For younger students use toys such as a horn, triangle, xylophone, etc. For older students, guitars, tambourines and bongo drums might be more appropriate. Have your student look through the instrument box and observe which toys interest her. When she picks up an instrument and plays with it (or even looks at it, reaches and/or smiles) imitate her with the same instrument or elaborate on what she is doing. In this way, you may get her to sometimes observe and/or imitate you. If she doesn't imitate spontaneously, occasionally prompt her to do so. The objective is not that she always imitate you, but that she begins to observe your similar actions and attempts to maintain joint activity by intermittent imitation.

Variation on procedure: During the joint action sequence, you can terminate the continuing activity by playing a new instrument that she doesn't have. Observe the student's response. Reinforce any eye contact, gaze shifts, pulling away of the toy, or any other indication that the student wants a joint interaction to continue. Another variation would be to use a more socially competent peer to play jointly with the target student.

Data collection. Record occurrence/nonoccurrence (percent correct) data on number of times your student maintains an interaction by imitating your action or prompting you in some way to imitate her. Take data on first ten trials of daily circle time session.

Social Curriculum Strand II

Context: (1) Adult-student (c) Community
Activity: Joint activity in a kitchen context

Procedure: Involve your student in cooking activities in which imitative responses could occur. Choose items that your student frequently interacts with (i.e., looks at, reaches for, touches, plays with, etc.) in the kitchen. Have two sets of objects available, including items like bowls, spoons, cups, egg beaters, kool-aid packages, sugar, etc. The student can observe your actions with these objects (e.g., making kool-aid) and sometimes imitate you. Shape this joint activity if necessary. For example, imitate your student's actions on objects or set up situations that are intrinsically reinforcing, e.g., eating icing with a spoon, etc.

Variation on procedure: Communication goals can be accomplished in the same context. Give student a spoon but withhold a bowl of icing. Teach your student to initiate a request by approaching you, touching you or holding out his hand. Allow the student ample time to respond spontaneously without prompting.

Data collection. Record occurrence/nonoccurrence (percent correct) data on imitative responses. You may prefer to record duration of interaction before prompting. Take data during the first ten minutes of this activity each session.

Context: (2) Student-student (a) Play/leisure/recess
Activity: Joint play activity

Procedure: Allow two of your students some time in the "play corner" or an area in which toys are displayed which may encourage social interaction and joint play; e.g., bubbles, balloons, ball, lite brite, slinky, etc. Observe students until it is clear which items your students prefer. Use duplicate sets of these three or four toys in your activity. Have two students sit on the floor facing one another; display toys. Allow students to play for a few minutes and then take all toys away but one. The target student should not have a toy to increase the likelihood that he observes the other student who still has one. As soon as he does look at the other student, provide him with the duplicate toy. Allow the students to continue playing with the duplicate set of toys, watching for the target student to observe and/or imitate his peer. Imitations can be socially reinforced by an adult who watches from a distance; when an imitation is observed, she can approach the student and hug him or tickle him, saying "you (moved the slinky) just like Ted!" When the students seem to tire of using a particular toy or when the target student does not seem interested in his peer's activity, introduce a new toy to the peer, removing the first set of toys. Again, when the target student looks at the peer, give him the duplicate toy.

Variation on Procedure: Rather than two handicapped children playing together, try a normal peer model or more socially appropriate student. Have the higher level student prompt or shape the target student to observe him. (Perhaps he can do something unusual with the toy to get the target student's attention, like banging it.) Occasionally, the peer can shape an imitative response from the target student. For example, the peer can push a ball toward the target student (disrupting his play) and wait for him to push it back. If he doesn't push it back, the peer can reach over and say "Push it back," placing the student's hands on the ball and helping him push. (The objective here is imitation of ball pushing, not turntaking.)

Data collection: Take occurrence/nonoccurrence data (percent correct) on spontaneous observations of the peer's play behavior and any imitative responses.

Context: (2) Student-student (b) Meal time/circle time
Activity: Joint recipe preparation

Procedure: Have two students work together to prepare a fruit salad for snack time. A partner should be selected who is already skilled in snack preparation as a model for the target student. First give them each an orange. As the nonhandicapped peer peels the orange, the target student observes. The nonhandicapped peer should get his attention if necessary. The peer performs an action like peeling the orange, and looks for the student to perform the same action. If this doesn't happen spontaneously, the peer can prompt it by beginning to peel the orange with the target student. As each fruit is cut up have students place them in a bowl to make a fruit salad. The peer can reinforce the student with small pieces of cut up fruit when the target student looks at his actions or imitates him. Students should sit together and eat their fruit snack at the end of the preparation activity.

Variation on procedure: This type of joint activity can be conducted in other student-student contexts, such as preparing the table for snack time, playing on recess equipment like swings, and using small videogames.

Data collection: Record frequency data on number of times the student observes the peer's activity. Also record number of spontaneous imitative responses. Collect data throughout the snack preparation activity on every other day.

Context: (2) Student-student (c) Community
Activity: Joint completion of laundry

Procedure: Have two students walk down to the laundromat with you. The handicapped student should be accompanied by two students who have previously acquired the basic skills of using a washing machine. Students should do the laundry together, i.e., carry the laundry basket, pull the laundry wagon, and load the clothes into the machine together. A peer tutor can model each response and the target student observes or imitates him in joint action. Some possible joint activities: 1) carrying laundry basket over to machine, 2) loading clothes into the machine, 3) pouring soap, 4) sitting together and waiting for laundry to be done. (Note: Emphasis is on joint social activity rather than competence in doing the laundry correctly.)

Variation on procedure: After the laundry routine is established, have the peer model disrupt the student's expectations by waiting rather than accompanying the student on the next step in the laundry sequence. The peer model should require the target student to make eye contact, to gesture or to gaze shift to request continuation of the activity.

Data collection: Take occurrence/nonoccurrence data (percent correct) on each of joint action skills: 1) carrying laundry basket, 2) loading machine, 3) pouring soap, and 4) sitting together and waiting. Data should be recorded as to whether or not student is imitating peer and working jointly rather than on ability to perform laundry skills.

Social Curriculum Strand II

Context: (3) Group (a) Play/leisure/recess
Activity: Object exchanges with other students

Procedure: Beginning with two students, set up a free play time in which each has a toy or object preferred by the other. Teach the target student to offer an object to the peer before trying to get his own preferred object by modeling and, if necessary, physically prompting extension of the object toward the peer. Reward the student for offering the object by having the peer immediately exchange the offered object for the object preferred by the target student. Expand the activity to new peers when the initial exchange is carried out regularly without assistance.

Variation procedure: Set up a small group puzzle activity, but give one piece of each student's puzzle to another student. Prompt students initially to look around for their missing piece and to exchange pieces with peers.

Data collection: Record the number of successful, unassisted object exchanges and the number of attempts each day if possible. Convert this ratio to percent (e.g., two successes out of three attempts = 66%).

Context: (3) Group (a) Play/leisure/recess
Activity: Joint use of painting materials

Procedure: Have your group sitting at a large table or on the floor together. Show your students a colorful finger painting and model this activity for them. Next, put down different bowls of paints within reach of all your students. Students should be prompted to finger paint jointly, sharing colors, and sharing space. Next, walk around the group and prompt students to observe each other and model each other's use of different colors.

Variation on procedure: Rather than having many bowls of paint displayed, have students work in dyads and share one bowl of paint between them. Another variation may be to teach students to initiate getting a new color of paint for their finger painting by gaze shifting or pointing to desired color.

Data collection: Record frequency of student observations (of peers) and spontaneous imitations within a ten minute time sample.

Context: (3) Group (b) Meal time/circle time
Activity: Group table clearing activity

Procedure: Have students clear the table at the end of lunch time or snack time. Have each student gather all the trash from the table on different days. One student gathers all spoons, another student all plates, another all cups, etc. You should initiate the clean up by starting the action and prompting the student to continue and finish the task. Use modeling and shaping procedures to teach each response. The goal is to have your student spontaneously finish the action when you cease to perform the task. As a reinforcer for working jointly and finishing the task spontaneously, the student can go on to a rewarding activity of her choice.

Variation on procedure: If the student is capable, have him go around the table, requesting each student to hand him the trash to throw it away. A request may be made in the form of a verbalization, a tap on the shoulder, a gaze shift, or holding out his hand to receive objects.

Data collection: Record occurrence/nonoccurrence data on student's attempts to spontaneously complete your table clearing actions.

Context: (3) Group (c) Community
Activity: Joint activity in the ice cream parlor

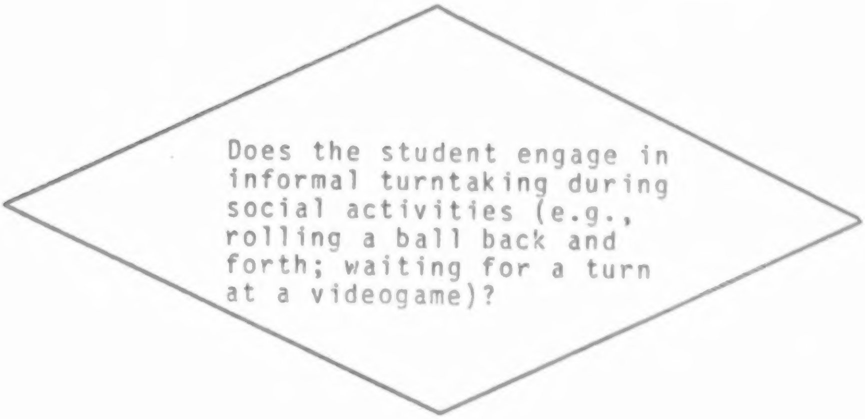
Procedure: Bring three of your students to an ice cream parlor where you can make your own sundaes. Have all ingredients and items needed to make an ice cream sundae displayed on one side of the table, e.g., napkins, bowls, ice cream, sprinkles, toppings, etc. Have an adult (or peer) model one step at a time; e.g., take one napkin and leave the rest on the table, waiting for students to take them (prompt if necessary). You should begin serving your student ice cream and hand him the spoon to continue, etc. The idea here is to have students continue your action (simple imitation) rather than more complex imitation responses. Go around the table until sundaes are complete and enjoy!

Variation on procedure: Other contexts can be found in the community in which joint activities can be facilitated. For example, washing vehicles at a car wash, building sandcastles at the beach, or joining a jazzercise class for group exercise.

Data collection: Record occurrence/nonoccurrence data on frequency of spontaneous imitative responses.

SOCIAL CURRICULUM STRAND III: ALTERNATION OF ACTION

Goal: Participation in informal turntaking



Does the student engage in informal turntaking during social activities (e.g., rolling a ball back and forth; waiting for a turn at a videogame)?

Context: (1) Adult-student (a) Play/leisure/recess
Activity: Imitation and elaboration games

Procedure: These "games" would work for any activity involving material use that the student performs fairly well and enjoys. Some examples include puzzles, tea set, blocks, playdough, sandplay, or a modified "concentration" card game. It is preferable that there be duplicates or a sufficient amount of the item so that both the student and the teacher have the same set of materials. To maximize student interest and to provide numerous opportunities for imitation, it is suggested that a few different items be available each session, e.g., puzzles, blocks, playdough.

The teacher should be seated with the student in a play area with the two sets of materials. The adult should observe the student's manipulation of the materials and should imitate the student's actions. For example, the student might insert a puzzle piece; the teacher would then insert the same puzzle piece on her board, and so on. Occasionally the teacher can put a piece in the student's board or delay her actions to see if the student prompts her. When the student switches materials the teacher should also switch materials, following and imitating the student's actions. The student's continued manipulation of the materials as well as initiations of new actions should be imitated and praised. The teacher can stop interacting in the middle of a game sequence and observe if and how the student attempts to reinitiate the game. The teacher should create a game-like atmosphere, providing a lot of positive affect and praising herself for imitation of the student.

Variation on procedure: Once the student is initiating and reinitiating this type of imitation game consistently, the teacher can elaborate as well as imitate the student's actions. For example, the student might stack a blue block; the teacher then might imitate by stacking a blue block and elaborate by stacking a yellow block. The student's attempts at imitating the teacher's actions should be immediately praised.

Data collection: Take sample frequency counts, e.g., during the second five minutes of session count "initiations" (including repeated actions) and count imitations of new actions (includes change of task materials and changes in material use). In elaboration context, record frequency of student's imitations of teacher's actions.

Context: (1) Adult-student (b) Meal time/circle time
Activity: Lunch preparation: Simple turntaking

Procedure: The teacher should establish a routine whereby the student is either given or required to collect a set of pictorial cards which serve as "orders" for lunch. In the latter case this might involve the student going around to each of her fellow students and collecting their lunch card. After receiving this set of cards or "menu," the student should present it to the teacher. The teacher should then assign chores to the student in accordance with her abilities. It is important, however, that the student be allowed to alternate chores to facilitate accommodation to daily changes in the lunch routine and to prevent boredom. For instance, one day the student might help prepare the juice, the next day the sandwiches, the next day dessert, etc.

Upon assignment of an item to prepare, the teacher might train the student to initiate the gathering of needed materials and the process of preparation. The teacher should then intersperse turntaking throughout the activity, both within preparation steps (e.g., stirring orange concentrate), and across steps, (e.g., after the student finishes stirring, the teacher pours the juice into glasses).

Variation on procedure: Once familiar with the routine, the student could be "teacher" and direct an adult to prepare items and turntake, e.g., student indicates "I'll pour the juice and you serve it". (This variation may be too high level for students who don't understand the concept of role playing.)

Data collection: The teacher may break down the activity into steps. The teacher should take data on occurrence of initiation and turntaking for limited samples of time at each step, e.g., collecting lunch orders, selecting items to be prepared, gathering materials, preparing food, etc. Latency data might also be desirable to measure how long it takes the student to initiate parts of the routine.

Context: (1) Adult-Student (c) Community
Activity: At the amusement park: Initiating, turntaking and accommodating

Procedure: On a community outing the teacher should accompany the student to an amusement park, a fair, or other such gathering. The teacher should encourge initiation by delaying directions for which ride to go on, which games to play, and when to participate. A simple time delay procedure should be effective in shaping the student's initiation of preferred activities. Once chosen, the teacher should train the student to stand in line and wait her turn; this training will probably include some combination of modeling, prompting and reinforcement with fading of these cues as needed. For example, the teacher might begin to teach turntaking by modeling, physically prompting, and reinforcing the student to stand in line. The teacher might then fade physical prompts by using gestural prompts, reducing modeling, and so on. The teacher might fade to the point where she hands the student the admission ticket and he walks over and stands in line. The object here is to get the student to use cues inherent to the situation and participate at a simplistic and appropriate level.

Variation on procedure: Initiation and simple turntaking could be generalized across a number of community settings - waiting for a bus, waiting in line at the bakery, etc.

Data collection: Take occurrence/nonoccurrence and frequency data on initiations of suggestions for amusement rides. Take a limited sample of occurrence/nonoccurrence data on turntaking (standing in lines for rides). Also anecdotal data should be taken on the student's accommodation of others waiting in line, on rides, at food stands and at parks in general.

Context: (2) Student-student (a) Play/leisure/recess
Activity: Simple turntaking in a no-win/no-lose game

Procedure: The game "Gnip-Gnop" or something similar should be used for this activity. "Gnip-Gnop" is a modified table-tennis game with a plastic cover which forces the ball to remain in either of the two playing areas. The object of the game is to get all of the three balls in one court while both players are trying to keep the balls out of their own court simultaneously. This activity could be varied in a number of ways. The teacher might begin by training the students to hit the levers of the game when a ball is in their court. The teacher could then have the students hit the levers simultaneously rather than teaching a formal game-like turntaking set of rules, (such as first Sam goes, then Maureen goes). To modify the object of the game, the teacher might consider using an eggtimer set for a couple of minutes. Whenever the timer goes off, the students should be trained to stop hitting levers to allow the teacher to count the number of balls in each court and reward the student who has gotten more balls in his opponent's court.

Variation on procedure: The students should be trained to initiate the game with preferred partners. In addition, whenever possible the teacher should substitute a higher functioning peer to keep score and administer reinforcement or train the students to self-reinforce and keep score.

Data collection: The targets of this activity are continued, simultaneous use of materials and simple turntaking. Take duration data on either the length of bouts of parallel play or length of overall time engaged in activity. Also take anecdotal data on level of play, cooperation, and affect for both students. If this is a daily activity, the teacher may want to reasonably limit the data collection to either three times per week or to the middle portions of the sessions.

Context: (2) Student-student (b) Meal time/circle time
Activity: Dress-up activity: Informal turntaking

Procedure: Dress-up time materials including hats, shoes, makeup, etc., are needed for this activity. The object of this activity is to have the students select items of clothing and take turns putting them on the teacher. A routine should be established where students select an item and put it on the teacher one at a time. The teacher should not restrict the order of dressing and should reinforce student's initiations of new actions, e.g., one student puts a shirt on, another student puts on socks. The teacher should also encourage and prompt the students to provide feedback and reinforcement to each other.

Variation on procedure: The teacher can select a theme for the activity, i.e., nurse, farmer, fireman, and provide the appropriate props. Do not use this variation for students who do not have the concept of role playing.

Data collection: Time sample, observing at regular intervals throughout the activity for turntaking, initiation of new actions, peer prompting, and peer reinforcement. Record frequency and type of prompts used by the teacher.

Context: (2) Student-student (c) Community
Activity: Helping others through accommodation and simple turntaking

Procedure: The objective of this activity is to enable a student to become aware of and accommodate to a peer's needs. When preparing for an outing, put the target student "in charge" of a peer. This student should be responsible for preparing, guiding, and assisting the peer before, during, and after the outing. For example, for a trip to the zoo the helping student will need to dress himself and his peer, collect his own as well as his peer's lunch, guide the peer to the bus, assist him in paying the fare, locate seats, etc.

This is a "one-sided," early example of turntaking where the other peer doesn't need to be very responsive. It is likely that the teacher may need to shape or prompt the exchange. Of course, the level of teacher intervention will probably depend upon the helping student's persistence at the task, as well as the degree to which the peer is cooperative. Let's say the helping student needs to first assist the peer to put on his coat and then put on his own coat. If the peer is relatively uncooperative, the teacher might direct the student to prompt the peer.

Variation on procedure: The student could be put in charge of the peer in a number of contexts, e.g., lunch, art time, music time, etc.

Data collection: Take occurrence/nonoccurrence data on selected targets for the helping student, e.g., gets lunches, puts on coats, gets seated on bus, etc. Also record type and frequency of teacher and student prompts. It is likely that a simple checklist with space for anecdotal and descriptive comments will prove most useful in a "trip" setting.

Context: (3) Group (a) Play/leisure/recess
Activity: Cooperative tactile activity

Procedure: The teacher (or the students themselves) should select a tactile activity that most students enjoy. One such activity might involve making playdough with water and corn starch. It is important that the paste be centrally located and well within the reach of each student. The students should be given one set of materials, e.g., a shovel, a bucket, a cookie cutter, etc., to be used to play with the paste. The students might also each be given a small bottle of food coloring to make designs on the paste. The teacher should monitor and facilitate observation and imitation of others. Any and all attempts at parallel, associative or cooperative interaction should be reinforced; if the reinforcement is not intrinsic to the activity, it should be provided externally by the teacher, i.e., social praise. The teacher might want to encourage turntaking with the materials by having each student use the set of materials for three minutes signaled by an eggtimer, and then passing the set on to the next student.

Variation on procedure: Other group activities might include cooking activities as well as cooperative art activities, e.g., fingerpainting murals.

Data collection: Time sample across students, recording observations of others, imitation of others, turntaking, and actions which are complementary or cooperative.

Context: (3) Group (b) Meal time/circle time
Activity: Turntaking with music

Procedure: This activity requires advance preparation of audio-tapes. The teacher should record each of the student's preferred songs on separate tapes. The teacher will probably want to limit the playing time of each tape to two or three minutes, so songs should be recorded accordingly. The two-minute selections should be taped at the end of individual cassettes so that the recorder will shut off automatically. The students participating in this activity must have the motoric ability to use a tape recorder or to direct another person to play the tape for them. At the onset of the activity, the teacher tells the students that they can listen to music. The prepared selection of tapes and a tape recorder should be centrally located so that all students can easily gain access to them. Each student should select a tape of a song they would like to hear. Then, either by teacher or self-selection, one student should play her song. At the end of the song the tape recorder will turn off and a "click" will be heard. This "click" should serve as a cue for the next student (determined either by seating position or by teacher) to remove the tape and play his song. This should continue until everyone has gotten their turn at playing a preferred song.

Variation on procedure: Instead of having the teacher direct the activity as to who goes when, the students may be allowed to self-select who goes next. Thus each student would simply need to be aware that the previous song has ended and be in possession of a song to be played.

Data collection: Record level of prompting used to establish alternating of tape playing until spontaneous initiations occur. Then record percentage of spontaneous initiations each session until criterion level is achieved.

Context: (3) Group (c) Community
Activity: Shopping for snack supplies

Procedure: The students should compile a pictorial shopping list. It is preferable that each picture of an item be mounted separately so that they can be carried individually by students. Once compiled (perhaps lined up on a table), the student should select those items that they will locate and purchase at the store. Once at the store, the students should go around and select items as a group. The students should be prompted to volunteer for their item to be found next. Spontaneous turntaking should be immediately reinforced socially. The teacher might use a time delay between the question "Who's next?" and the direct prompt; this is to encourage the students to use a pause in an interaction as a prompt to take a turn. If possible, the students should also take turns to pay for the item. (NOTE: For students who don't respond well to pictures, actual sample grocery items might be substituted.)

Variation on procedure: The student might be paired with a high functioning student who can shop fairly independently so that teams of shoppers could locate the needed items.

Data Collection: Take occurrence/nonoccurrence data on turntaking, level of prompting used, and anecdotal data regarding accommodation to this shopping routine. A simple checklist with space for comments should be constructed for easy use in the market.

SOCIAL STRAND IV: RECIPROCAL ROLE EXCHANGE

Goal: Role exchange during social activities

Does the student exchange roles during a social activity (e.g., riding and pulling a friend in a wagon; exchanging washing and drying roles during meal clean up)?

SOCIAL CURRICULUM STRAND IV: RECIPROCAL ROLE EXCHANGE

Context: (1) Adult-student (a) Play/leisure/recess
Activity: Sharing and taking turns with toys

Procedure: In a confined area such as a side room or a partitioned play area with a number of the student's favorite toys on the ground, simply "play" with the student; that is, use toys in parallel fashion, share toys, exchange toys, etc. The object of the activity is to teach the student to share toys, to take turns using them, to negotiate play space, and to maintain another person's involvement in an activity.

Two play formats should be employed during this activity, a "teacher-directed" and a "student-directed" one. During the teacher-directed format, the teacher determines what toys are to be played with and how they are to be used. The student is prompted and guided to follow the teacher's lead during this time. The teacher might instruct or prompt the student to use a particular toy in a particular way, and follow the student's correct response with praise and/or a reward. Later on, the teacher might introduce novel toys or even use old toys in novel ways.

During the student-directed format, the student determines which toys are to be used and how. The teacher follows the student's lead by staying close to the student and imitating the student's use of the toys. Every once in awhile, the teacher may introduce a novel toy into the session by handing it to the student, and waiting to see what the student does. The teacher should not verbally or physically direct the student's play behavior during this activity. The objective is to teach the student sharing and turntaking skills, but in a context where the student determines the "rules of the game." During student-directed sessions the teacher should respond to the student's requests whenever appropriate. This includes those times when the student "pushes" or gestures for the teacher to go away. What might be done in this situation is for the teacher to move away for five-to-ten seconds and then re-approach the student and wait for an opportunity to share or exchange toys.

Variation on procedure: The two types of formats may be alternated from day to day, from one five-minute block of the session to the next, or in whatever pattern that seems to best suit a particular student's skills and abilities.

Similar procedures, both teacher-directed and student-directed, might be used on the playground as well.

Data collection: Keep data on the number of toy exchanges (sharing) and the number of alternating uses of the same toy (turntaking) occurring during each of the two types of sessions. Data should be kept during the first and last five minutes of the sessions.

Since the teacher will be quite busy during this time, it is suggested that data be collected on the occurrence or nonoccurrence of targeted behaviors by sampling the student's performance at randomly occurring intervals.

Context: (1) Adult-student (b) Meal time/circle time
Activity: Role reversals while singing songs

Procedure: The student should be able to sing at least one or two songs by rote. The object of the activity is to teach the student to take turns alternating back and forth between being a follower and a leader of the singing. The teacher should start by singing a song that the student knows, and getting the student to sing along. At various intervals, the teacher should interrupt the activity and ask the student "Joey, sing a different song." If the student does not respond to these cues, restate the instruction and wait. After a third unsuccessful trial, prompt and/or guide the student to start a new song. When the student begins a song, the teacher should sing along (The teacher's voice volume should be below that of the student's, but only slightly so. This is to make sure that the teacher can hear what the student is saying, and to cue the student that they are now the leader of the song).

After the student has finished singing (or begins to drop words or segments of the tune), the teacher should say "My turn" and immediately introduce another song. This time the teacher should sing with a slightly higher volume to cue the student that now the teacher is the leader and he is the follower. Again, sing for a short while and then allow the student to take on the role of the leader.

Variations on procedure: A similar program may be used during snack or lunch preparation. This time, however, the teacher disrupts the preparation and asks "Sammy, what do we do now?" Again, follow appropriate respones with praise and rewards (if necessary), and inappropriate responses with another trial or prompts and guidance. The teacher may resume the role of leading the activity by saying "My turn" (to decide), thus alternating back and forth during the session.

Data collection: Data should be collected on the latency of the student's responses to the role reversal opportunitites (i.e., the time between the cue to change roles and the student's response), and the amount of time that the student attends to the activity (i.e., orients toward the teacher, responds to cues and instructions, or continues a turn). Sample the first five minutes of each session at randomly determined intervals.

Social Curriculum Strand IV

Context: (1) Adult-student (c) Community
Activity: Shopping roles

Procedure: The object of this activity is to teach the student role reversal and turntaking skills in a community setting such as a supermarket. The task will involve having the student find specific items on the shelf, alternate with the teacher in pushing the shopping cart, and imitate modeled shopping skills. (If the student does not know either the labels or the signs for the snack items to be purchased, then picture cards might be used to cue the student as to which items are to be found.)

Upon entering the market, the teacher should start the training by standing with the student next to the shopping carts. Wait five-to-ten seconds to see if the student spontaneously takes a cart and begins to push it. If not, model taking a cart, and then return it. Then wait for the student to take a cart, and repeat if necessary. After a third unsuccessful trial, instruct or prompt the student to take a cart and begin to walk down the aisles. Follow all correct responses with praise and an edible reward (if necessary).

While walking down an aisle, check to see if any of the items on the shopping list are close by. Start the "shopping game" with these items. Begin by asking the student "Mary, find the (item)" while simultaneously showing her a picture of it. Wait five-to-ten seconds for the student to respond. Follow a correct response with praise, etc., and incorrect responses with a repetition of the trial. Prompt a correct response after the third incorrect trial.

On the next trial, have the student direct the teacher to find an item. This might be done by saying to the student "Now it's your turn" and handing them the pictures for the remaining items. Have the student say something like "Find the (item)" while simultaneously giving the teacher the picture. While the teacher is finding the item, the student should be holding onto the shopping cart, and perhaps following close behind. This change in roles can be repeated for as many items as there are to be found.

Variations on procedures: Roles may be switched according to a number of different criteria. For instance, role switching might occur after every item, after every aisle, or after any easily discriminable physical or temporal landmark has been passed.

These same procedures may be used in other settings such as the laundromat, or the library.

Data collection: Keep data on the student's latency of responding to the indirect "waiting" cues, the number of correct and incorrect responses to the item search requests, and the number of times the student correctly directs the teacher to find an item. Data should be kept throughout the entire session for the first several sessions, and then on a randomly determined sample of the sessions after that. Other types of data might track the student's use of pointing, gaze shifts, vocalizations, and simple and complex speech in interactions with the teacher.

Context: (2) Student-student (a) Play/leisure/recess
Activity: Learning roles in outdoor games: Kickball and swinging

Procedure: The teacher should begin training by working with one student in isolation. Begin by standing close to the student and gently kicking the ball so that it ends up near the student. Wait for a short while, and if the student does not kick the ball back, prompt him to do so. It does not matter at this time if the student kicks the ball directly back to the teacher, only that the student kicks the ball (suggestion: have two or three balls handy for this activity). As soon as the student kicks the ball, tickle and/or hug him (if the student enjoys this kind of contact). Once the student is kicking the ball consistently, shape him to kick it to a specific person or place. At this time, a similarly skilled peer may be introduced into the activity and a two person, back and forth, kickball game can be shaped. To incorporate some role reversal opportunity, one person can roll the ball while the other kicks. These roles can be exchanged.

Variation on procedure: 1) Teach the students to tickle or "rough-house" with each other with the ball as a focus of the interaction. This might be done by first getting the two students to chase a ball that is being kept from them by the teacher (e.g., by kicking it away from their grasp every time they reach for it). Start by frequently letting one or both of the students capture the ball and tickling them immediately afterward. Once a high level of "chase" is established, fade both the contingent tickles and the teacher's presence out of the activity. Then the students can continue the game independently alternating ball "keeper" and ball "chaser". 2) In another outdoor activity, two students take turns swinging and pushing. With one student sitting and the other student behind him, they are taught to exchange roles. For example, the student who is pushing the swing stops doing so, walks around to the side of the swing, and waits or signals for the other student to switch places with her. In training this skill, the teacher should initially provide both direct and indirect guidance and prompts, and a high level of reinforcement to each of the participants. As the students become more skilled and fluent in their roles and change of roles, fade both the prompts and the teacher-delivered reinforcers out of the activity.

Data collection: 1) Keep data on the student's duration of involvement in the activity (look for cues such as turning away, and increased latency of responding as indicators of the student's waning interest). Simultaneously record anecdotes on the student's use of gestures (e.g., points, gaze, gaze shift) to initiate, maintain, and terminate the activitiy. Data should be collected everyday during the first ten minutes of the program. 2) For the swing activity, keep data on the number of prompted and unprompted role exchanges, and the duration of involvement in the activity. Anecdotal records might indicate the types of cues that each student uses to negotiate the role reversals (e.g., gaze shifts, pointing, passive gaze, vocalization, etc.). Data should be collected for the first ten minutes of each session.

Context: (2) Student-student (b) Meal time/circle time
Activity: Cooperative snack or lunch preparation

Procedure: This activity can be run with two students while they set the table, prepare food items, and clear the table at either snack or lunch time. The materials needed for this activity include dishes, silverware, cups, napkins, snack or lunch foods, and dish bins for clearing the table.

The teacher should prepare for the activity ahead of time by deciding which of the many possible activities each of the two students will be assigned to. This decision should be based on the individual student's competencies and skills.

The activity may be divided into tasks such as "dish-monitor," who is reponsible for setting plates, cups, napkins, and silverware on the table; "table setter," who sets up the place settings for everyone; "food preparer," who prepares the food stuffs; "drink preparer," who prepares the drinks; "food server," who puts the food on the plates; "drink pourer," who pours drinks for everyone; and so on until all such tasks are assigned.

The different roles can be assigned so that the two students are doing tasks simultaneously (e.g., one student setting the table, while the other student prepares the snack), or sequentially (for instance, setting the table, placing food on the plates, clearing the table, etc.). The second type of assignment helps to build a dependency among the students, since each student's next task is dependent on the other student's completion of a previous task.

Variation on procedure: This task may be varied in many ways. For example, students may share doing a task like food preparation, with one student gathering the food stuffs, the other getting the utensils needed to prepare them, and then both of them working side by side to make sandwiches. Again, both simultaneous and/or sequential roles may be assigned to each of the students.

Data Collection: Once each student has been assigned his roles, data can be kept on whether he successfully completes the role (occurrence or nonoccurrence). This will help to identify which roles a particular student has learned and which ones he has trouble with. Type and frequency data might be kept on the student's cooperative behaviors (e.g., helping a peer to complete a task, or giving a peer directions or guidance). Data on cooperative skills might be collected throughout the entire session.

Context: (2) Student-student (c) Community setting
Activity: Cooperative efforts at a fast-food restaurant

Procedure: Before conducting this activity, the teacher should arrange ahead of time with the management and employees of the restaurant that will be visited to work out a script and to arrange for certain events to occur (such as filling the students' orders by giving the food and drinks in separate bags or paying in advance).

This activity can begin with two students approaching the order counter. At this time the students can be guided or prompted to one of two roles (i.e., first in line, second in line). After each student places their order, they can either wait or step back away from the counter until their order is filled.

After the order is filled, one student should take the food bag and the other student the drink bag. They should then walk to a table and exchange items so that they each have food and drink. Each student could be responsible for throwing away their own trash, or one student could be assigned the role of cleaning up. While leaving, the student who did not do the clean-up could hold the door open for the one who did.

Variations on procedure: More and different roles could be introduced into the activity in a number of ways. For example, after the order has been filled, one student could take both the food and drinks to the table while the other student pays for them. Students could learn to reverse roles on alternate trips to the restaurant.

Data Collection: Data can be kept on the student's completion of a role as well as anecdotal data on cooperative behavior. Collect data during all sessions until the students are performing all the roles at a high level of mastery.

Social Curriculum Strand IV

Context: (3) Group (c) Community
Activity: Cooperative laundry efforts

Procedure: The object of this task is to teach students to work in a group by taking turns and assuming different roles while doing laundry. Ideally, only three or four students should be involved at a time. Depending on facilities, a wagon, a clothes basket, laundry soap, powdered bleach, and quarters and dimes are needed for this activity.

Before going to the laundromat, the students can be assigned roles needed to carry out the various tasks of getting the laundry done (e.g., gathering the clothes and putting them in a basket, loading the basket into the wagon, pulling the wagon out to the car, putting clothes into the machine, loading coins into the machine, etc.) The roles should be assigned so that each student has specific roles to perform throughout the entire task. For example, the first student pulls the wagon into the laundromat and up to the washer. At this time the second student can be putting laundry soap into the machine, while the third student is loading it with coins. At this point, all three students can load clothes into the machine, and so on. (Note: It is a good idea to have already decided what the students will do during the time they are waiting for the laundry to finish.)

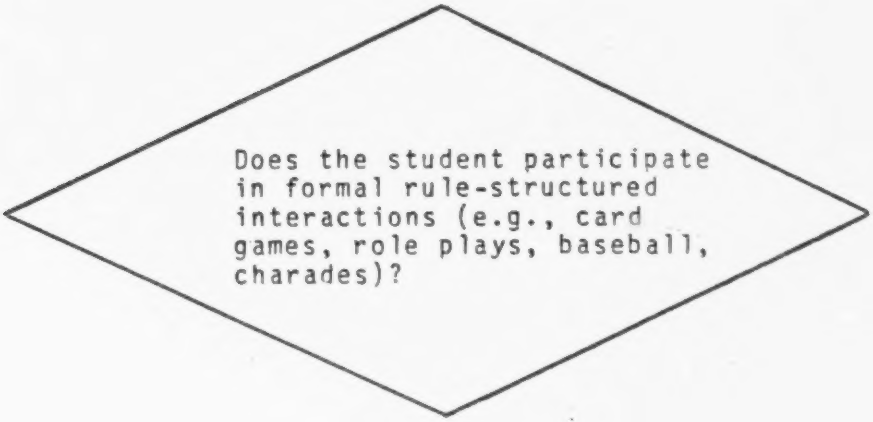
On other laundry days, the students could switch roles so that they are participating from a different perspective each time. The teacher should determine ahead of time that a given role is appropriate for a given student (making sure that a task is within their competencies). If all the students are close in their competencies, they may be assigned roles at random.

Variations on procedure: Different roles could be assigned in other contexts as well, such as a group cooking effort in someone's home.

Data collection: To assess the students' cooperative interactions during this activity, data should be kept on the individual student's completion of a role and the "synchronicity" of actions; that is, how well the students coordinate their actions. For example, do the two students who are putting laundry detergent and coins into the laundry machine do this so as not to interfere with each others' actions? (i.e., are they standing where they should be?; do they help each other to complete the task?; etc.)?

SOCIAL CURRICULUM STRAND V: FORMAL RULE-GOVERNED INTERACTION

Goal: Participation in formal rule-structured interactions



Does the student participate in formal rule-structured interactions (e.g., card games, role plays, baseball, charades)?

Context: (3) Group (a) Play/leisure/recess
Activity: Role exchanges in relay races

Procedure: For this activity have two separate groups of students standing approximately eight feet apart in a line and facing each other. The object of the activity is to have students, one at a time, run back and forth and hand objects to each other. To facilitate each student's interest in the game, have the "runner" hand the "receiver" an object that they like (such as a grape or raisin, a musical instrument, or a preferred sensory "stim" object. Note: Choose items that do not interfere with the continuity of the activity).

Start the activity by having one student run from one line to the other and hand an object to the student in the front of the opposite line. Once the runner hands off the object, they should go to the end of the line and wait for their chance to become a "receiver." (Note: To begin with, it would probably be good to have only two students in each line so that they do not have to wait very long between turns). If the object being handed off is edible (e.g., a grape), let the receiver eat it; simultaneously hand him another grape to take to the new receiver in the opposite line.

Variation on procedure: To vary this activity, have the students climb over (or under) a jungle gym, or run a circle around a merry-go-round. For this latter activity, the students can all be lined up in one line with the front student starting the activity by running around the merry-go-round and handing an object off to the next student in line.

Data collection: The skills and behaviors on which data should be kept include (1) how long a student will wait for a turn, (2) whether a student completes a turn, and (3) level of independence (e.g., the type of prompts or guidance needed). For the first type of data a timer will be needed to measure the duration of the waiting interval. For the second data type, a simple occurrence or nonoccurrence count can be kept. Finally, anecdotal notes may be adequate to demonstrate changes in the level of independence.

Context: (3) Group (b) Meal time/circle time
Activity: Cooperative serving of snack

Procedure: The objective of this task is to allow students to experience various roles and perspectives in a daily routine.

The number of roles to be assigned will be determined by the number of items to be served. Each item may be served by different students or all may be served by one, depending upon the amount of time the students are capable of waiting before eating. The remaining students can all be designated "customers". A "server" can serve his peers individually using verbal and nonverbal skills appropriate to the level of competency of individual students.

These roles can then be switched so that students have the opportunity to function as both "customers" and "servers". Throughout the activity, students can learn to prompt one another to reduce teacher involvement.

Variation on procedure: The role of "table clearer" can also be added or interchanged in this manner, as can "food preparer". Again, roles should be exchanged as frequently as possible.

Data collection: A student should be given as much time as possible to learn his assigned role before changing it. A record should be kept of the length of this learning period until correct performance is independent. Frequency counts can also be made on the number of correct assists/prompts provided to peers and received by peers. Specific skills may also be targeted according to the needs of particular students.

SOCIAL CURRICULUM STRAND V: FORMAL RULE-GOVERNED INTERACTION

Context: (1) Adult-student (a) Play/leisure/recess
Activity: Pretend play

Procedure: Set up game in which the adult role plays someone, such as a mother. The student pretends to be someone else, such as a baby. The roles to be taken by each person should be clearly established before beginning the game, as well as a specific script to be acted out. For example, the pretend mother could be feeding the baby. Be sure to select roles and scripts familiar to the student. When the student is first exposed to this type of role play, model and/or prompt responses as needed. Length and complexity of scripts should be carefully planned to suit the student's abilities.

Variation on procedure: 1) Switch roles so that the student pretends to be the mother and the adult pretends to be the baby; 2) Act out a different script, while maintaining the same roles; 3) Act out two scripts consecutively when the student seems capable of extending the role play. For example, after feeding the baby, the mother could get the baby ready for bed.

Data collection: Set up criterion levels of performance for selected goals, such as a) extending length of pretend exchanges which student is capable of maintaining; b) increasing role play flexibility as evidenced by the ability to reverse roles with someone else; c) increasing diversity of pretend roles in which student can participate. Collect data appropriate to specific goals for that student during the first ten minutes of each role play activity. For example, duration data might be needed to measure length of pretend exchanges which student is capable of maintaining. Occurrence/nonoccurrence data might be needed with regard to the student's ability to reverse roles with someone else. Data might also be collected to assess the number of pretend roles in which student participates.

Context: (1) Adult-student (b) Meal time/circle time
Activity: Cooperative food preparation and role play activities

Procedure: The teacher and student take on roles which require cooperation during the preparation of snacks or lunches. For example, the teacher hands the student slices of bread one at a time and the student spreads peanut butter on each piece. Then roles could be reversed and the student hands pieces of bread to the teacher one at a time, waiting for the teacher to spread jelly on each piece. Then the student might set plates on the table for all the students, while the teacher puts together the sandwiches. Perhaps next the student passes out the sandwiches. The important aspect of these activities is that they require the student and teacher to work together to accomplish a task in which more than one step is involved.

Once this routine is established, the student and teacher could use this situation for role play. They might both pretend to be waitresses, or one could be a waitress and the other could be someone ordering food in a restaurant

Variation on procedure: Once a particular role play situation is easily accomplished by the student, new variations can be introduced. For example, in a group situation where the teacher and student are role playing waitresses, a problem could occur. Maybe someone's milk spills on the floor. This can be used as an opportunity for joint problem solving by the student and teacher. The student could be taught to request help from the teacher to get the necessary cleaning material, to cooperate and help each other wipe up the milk, and to negotiate who will get more milk. Particular requesting, cooperation, and negotiation skills may need to be modeled and shaped initially.

Data collection: Data can be collected on a variety of goals during snack time, depending on objectives for the students; e.g., occurrence/nonoccurrence of negotiation skills, (can the student negotiate a turn to use the spreading knife?), cooperation skills, (can the student work with someone else to complete a task, taking his turn when appropriate, waiting when appropriate, and following a sequence of steps with someone?), role reversal ability, (can the student easily switch roles with the other person involved in the activity, so that he stops spreading peanut butter and instead delivers the bread one piece at a time?), pretend play, (can the student pretend to be a waitress?).

Context: (1) Adult-student (c) Community
Activity: Developing cooperation skills at the laundromat

Procedure. The adult has the student help her do the laundry, focusing on developing cooperation skills. One possible scenario would be to have the adult sort out the colored clothing while the student sorts out the white clothing. The student might learn to pour in the detergent after the adult turns on the machine and it fills with water. Later, the student might add some softener when the adult opens the lid of the machine. To begin with, these activities should be established as routines, so that the student's cooperative participation is always the same.

To develop flexibility in the student's responses, his particular tasks might be changed intermittently, so that he might turn on the machine and the adult pours in the detergent. The adult can provide opportunities for student flexibility by performing the student's parts of the task and waiting to see if he then carries out the adult's part of the tasks. Prompting may be required when the student's expectations are initially disrupted.

Variation on procedure: In the school setting, role play activities can be set up to pretend that the laundry is being done.

Data collection: Depending on goals for the student, a variety of data might be collected during each trip to the laundromat. For example, occurrence/nonoccurrence of successive initiations in the laundry sequence might be recorded. Occurrence/nonoccurrence of role switching initiations might be recorded as well. If appropriate, anecdotal data might be collected with regard to role playing ability.

Context: (2) Student-student (a) Play/leisure/recess
Activity: Imitation partners

Procedures: The student should be given a partner who may be a peer in the class or a nonhandicapped peer, depending on the needs of the student and the ability of the peer partner. A game should be set up where the students hold hands and move around in a circle together when the music starts playing. The music should then be stopped and the teacher says "freeze." Dropping their hands, one student pretends to be a mirror, imitating whatever the other student does. The roles are then switched and the first student models behavior for the second student to imitate. The music should be started again when each student has successfully imitated the other. Keep the movement around the circle simple enough for the student's ability. It may be best to start this game with an older nonhandicapped peer who can "teach" the student the rules of the game, modeling and prompting as necessary. The objectives of this activity for the target student include the ability to comprehend and follow the simple rule structure inherent to the game, the ability to pretend (to be a "mirror"), the ability to take turns at regular intervals, and the ability to imitate and model simple behaviors.

Variation on procedure: 1) Initially, the nonhandicapped partner will need to begin the imitation part of the game. Eventually change the rules so that the student initiates by modeling a behavior for his partner. 2) Once the student has successfully learned to play the game, have him "teach" another peer in the class who could benefit from this type of imitation game. 3) For older students who are capable, the imitation sequences can involve role play. For example, animal or vehicle imitations can be done, and the second student can guess what the first student is trying to be. The objective for students in this activity might be the ability to comprehend and enact roles related to particular topics (i.e., animals, etc.).

Data collection: Collect frequency data on imitations of simple movements and role reversals each time the game is played. Such data might be collected during alternate sessions rather than during consecutive sessions. Length/complexity of imitation sequences should be recorded as well.

Context: (2) Student-student (b) Meal time/circle time
Activity: Sharing food

Procedure: The target student should be paired off with another student during snack time. The partners can be given two or three food items to share, such as a peeled orange, a cup of raisins, and a pitcher of juice with two cups. One student, perhaps a nonhandicapped peer initially, should begin by giving the other student and himself a section of orange, several raisins, and some juice in each cup. When both students have finished eating their portions, the target student should take on the serving role and distribute the food items, as was done by the nonhandicapped peer. Prompting and/or modeling of serving behavior may be needed.

To add a symbolic play component, the students might pretend they are having a tea party. All the food items could be imagined rather than real, with each student still taking turns distributing pretend tea and cake or cookies.

Variation on procedure: The teacher could set up problem-solving situations for the students which require mediation through each other in order to be resolved. For example, one student could be given some chocolate sauce while the other student is given some milk. In order to make chocolate milk, which is earlier modeled by the teacher, the two students must negotiate and cooperate in some manner. Again, a nonhandicapped peer could be paired with the handicapped student initially in order to provide a problem-solving model.

Data collection: During each snack time, occurrence/nonoccurrence data can be collected for sharing behavior (whether the student distributes food items to the other student when it is his turn), role reversal behavior (whether the student can switch roles, alternately serving and receiving food items), and negotiation skills (whether the student asks his partner for the chocolate sauce to put in the milk). Anecdotal notes can be taken with regard to role playing ability.

Context: (2) Student-student (c) Community
Activity: Park or playground interactions: Pretend play
and cooperative games.

Procedure: Simple tag games can be played that involve some pretend activities. For example, the chasing student can pretend to be an animal, like a bear or an elephant, and try to capture the other student. When the student is captured by being tagged, he becomes the chasing animal.

Games which require cooperative efforts can be played as well. For example, "Kick the Can" can be played in which the rules are that the person is home free if he is able to kick a small can before the other person finds him hiding. (This can be played in a group situation as well.)

Variation on procedure: After playing a game for awhile, like those described above, change the rules so that the student learns to be flexible within social games. For example, in the tag game the rules could be changed so that the students pretend to be vehicles, like a train or an airplane, rather than animals.

Data collection: Observe the student's interaction with the nonhandicapped peer during a social game for ten minutes. For the tag game, record duration of play, frequency of turn exchanges, and occurrence/nonoccurrence of pretend behavior.

For "Kick the Can," record duration of play and ability to follow the rule structure of the game. The latter can be accomplished by keeping track of the number and type of prompts needed for appropriate participation.

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Context: (3) Group (a) Play/leisure/recess
Activity: Group hugging game (or shaking hands with older peers)

Procedure: While music is playing, all the students move around the room doing whatever is modeled--hopping, crawling, rolling, etc. When the music stops, each student gives another student a hug. Then the paired students become partners. When the music is started again, the partners do together whatever is modeled. This time when the music stops, the partners find another pair of partners or another single student and they all hug together. The game continues until everyone is hugging everyone else. Initially, the hugging behavior and the forming of larger partnerships may need to be prompted and/or modeled. The objective of this game for the target student is to learn to cooperate in a group game and to follow a group game rule structure.

Variation on procedure: 1) One student can direct other students to tell them who to hug when the music stops and to direct them to form larger groups. Such direction can take the form of nonverbal prompts. 2) To modify this activity for older students, it could become a hand shaking activity. Each student can pretend to be someone else in the class. When each person shakes hands with someone else, he can introduce himself as that other person and the person whose hand he is shaking can say hello to the pretend person.

Data collection: Model the game for the students first with at least six nonhandicapped students. Continue to involve the nonhandicapped students as models when teaching. Collect individual anecdotal data regarding each student's ability to cooperate in the game and to learn the rule structure of the game. Record which students need shaping and/or modeling to learn the game. Frequency counts of appropriate imitations can be recorded, as well as recording whether individual students can spontaneously initiate successive steps in the game. Data should be collected during the first ten minutes of the game each time it is played.

Context: (3) Group (b) Meal time/circle time
Activity: Group food preparation

Procedure: The teacher shows the students a large recipe card depicting three-to-five steps for food preparation, such as making a salad. After simply describing to the students what they're going to do, the teacher asks an individual student what needs to be done first, pointing to the first picture on the recipe card. That student then directs another student, telling him what to do in the food preparation area (which has already been set up). Each step can be completed by a different student and different students should be given the chance to direct other students. It may be necessary to involve some nonhandicapped peers to successfully complete this activity. To incorporate pretend play, the student who has a turn to complete a step could wear a chef's cap, pretending to be a cook, while the student who directs could pretend to be the teacher, holding the recipe card up in front of the group.

Variation on procedure: 1) This activity can be used to prepare food during snack or lunch time, but it can also be used to prepare special treats like a cake for a birthday party. 2) When a recipe has been used often enough that the students know it well, they can be asked by the teacher to tell her what the steps are before the actual preparation is begun. According to the directions given by the students, the teacher can draw the appropriate steps on the chalkboard, or a student can try to draw them.

Data collection: During each group food preparation activity, collect occurrence/nonoccurrence data regarding the ability of individual students to initiate or anticipate a turn. Anecdotally note whether students are able to understand the sequence of events involved in the food preparation sequence (as evidenced by such behaviors as getting the utensil required for the next step or spontaneously directing another student to perform the next step). Record occurrence/nonoccurrence of role playing.

APPENDIX C

INSTRUCTIONAL PROCEDURES FOR PROMOTING COMMUNICATION BEHAVIORS IN NATURALLY OCCURING CONTEXTS: A SELF-TRAINING GUIDE

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PURPOSE

The purpose of this manual is to provide the classroom teacher with a self-instructional guide to teaching communication skills in naturally occurring contexts throughout the school day. These materials will provide practice and experience in the maximum utilization of potential situations whereby the teacher can elicit functional social and communicative behaviors from autistic and severely handicapped students.

Times throughout the school day when "regular" instruction is not planned but when many opportunities exist for the natural promotion of social/communicative interactions between severely handicapped students and their teachers are the focus of this guide. These brief yet numerous opportunities during the day are referred to as transitions and are those times when changes are being made from one planned activity to the next. They include for example, the first arrival in the morning while waiting for all the students to come into the classroom, the change from an individualized to a group instructional activity, preparing to go to recess or lunch, arrival from recess or lunch prior to the beginning of the next scheduled activity, or preparing to leave for the day. Countless other opportunities no doubt exist as each individual classroom has its own unique instructional flow and composition.

The present packet focuses on instructional techniques specifically related to teaching early social and communicative skills in these transitional settings. Techniques and suggestions center around the special education classroom teacher and the opportunities available during the school day when she can generalize these instructional strategies in the promotion of social/communicative behaviors.

OVERVIEW

The profound and general failure to develop social relationships along with disturbances of language and communication are central features of childhood autism. Language and communication are critical behaviors both because of their complexity and because children need them to function normally. Consequently, the development of social and communicative behaviors in autistic and severely handicapped students is one of the greatest challenges faced by the special education classroom teacher. Compared to other related disciplines special education, particularly with the severely handicapped, is still in its infancy. For this reason special education professionals must rely on a coalescence of theory, clinical judgement and observed student progress in order to make reasonable valuations about which instructional techniques maximize student gains. As always, reliably observed student progress, along with the ability of the teacher to adapt in response to the changing needs of individual students, provides the true measure of worth of any instructional strategy.

Autistic and severely handicapped children do not acquire social/communicative behaviors in the fashion of normal children. The classroom teacher must then, by design, structure and arrange situations throughout the day to promote both the development and maintenance of these behaviors. Responses must sometimes be prompted or modeled with this population, or situations must be intentionally planned to promote social and communicative behavior.

Many opportunities exist for the encouragement of social/communicative skills throughout the school day apart from regularly scheduled instructional settings. These times might best be identified and referred to as transitions, that is brief "breaks" between regularly scheduled tasks and instructional activities, examples of which have been detailed elsewhere.

Of paramount concern is that the social/communicative skills taught during these daily transitions be functional for the student and manageable for the teacher in naturally-occurring contexts. The classroom teacher is encouraged to use what occurs naturally during these transitions in such a way that the student's behavior will have an obvious and useful impact on the environment.

For the purposes of this guide the concept of functionality can best be thought of as relating to the student's perspective of the situation. Situations which are functional from the student's viewpoint will be those in which attempts are made to accomplish something; such as gain access to the outdoors when it is time for recess, obtain a preferred activity during free play or get a jacket when it is time to go home. Instruction to develop clearer or more appropriate communicative behavior in these situations can be very important when teaching early social and communication skills. It may also help the students to understand that social and communicative interactions with others are a means of exerting control over their environment, something which is not often possible in the highly structured settings provided for these students.

INCIDENTAL TEACHING

The techniques described herein may be considered to be extensions of the instructional procedures referred to as incidental teaching. These techniques can be used to elicit and maintain the social/communicative behavior of autistic or severely handicapped students. When the classroom teacher becomes familiar with the concept and the suggested strategies, incidental teaching can be a technique for promoting productive and satisfying daily interactions with the students.

The principle of incidental teaching as described by Hart and Risley (1982) involves three primary components. The process begins when the student initiates a communication. In the case of the severely handicapped student this initiation is not likely to take the familiar conversational form that one would expect from the normal child. Instead the teacher may encounter an unintelligible utterance, a gaze shift or a point response toward the desired object. It may even be necessary for the teacher to set up the situation by showing a desired toy or moving an item out of reach in order to prompt student initiation. Whatever the level of response in the student's repertoire, the classroom teacher who is attuned to the signals of initiation from an individual student now has an opportunity to capitalize on the situation and promote continued and more elaborative communicative interactions with that student.

The second component of incidental teaching is teacher responsiveness. Once the student has initiated a request for an object or for assistance and the teacher responds by delivering that which was requested, the teacher has been responsive to the student. The teacher can now be identified as a source of giving desired objects or providing help and the student will be likely to come to the teacher again in similar situations, thus increasing opportunities for future social/communicative interactions.

Showing interest is the third component of incidental teaching and goes a step beyond mere responsiveness. Showing interest involves putting aside what the teacher is doing at the moment and asking for more information or commenting on what the student is trying to communicate. It indicates that the teacher believes that what the student is communicating is important, even if the communication is as basic as a point response to request an object.

Hart and Risley (1982) outline a series of nine steps to be followed when using incidental teaching. Their format has been adopted here with modifications to describe how incidental teaching can be implemented in a classroom for the autistic or severely handicapped.

STEP I: The setting contains materials and activities that are appealing and appropriate, things that students are likely to request or activities in which they will want to engage.

Examples: a) classroom learning centers
b) outdoor recess toys
c) free activity areas

STEP 2: The adult is someone who is significant to the student, someone to whom the student would go to for help in doing or getting things or permission.

Examples: a) teacher

b) aide

c) nonhandicapped peer

STEP 3: The action. The adult may be busy near the student or elsewhere watching for signs that indicate the student is initiating a communication.

Examples: a) The teacher is getting materials for an activity

b) The aide is seated near student at recess or lunch

c) The peer is walking near the student

STEP 4: When the student initiates, the other person looks at him, smiles and focuses on the object or request that is of interest to the student.

Examples: a) The student says, "This" while pointing at his coat

b) The student gazes at his lunch across the room

c) The student points as she walks toward the swing

STEP 5: If the other person is not sure of the student's topic he attempts to verify by asking a question.

Examples: a) The teacher says, "Your coat?"

b) The aide says, "The lunch?"

c) The peer says, "The swing?"

STEPS 6: The other person attempts to foster improved communication by rephrasing the question in order to obtain a more elaborated response from the student.

Examples: a) The teacher says, "Want help?" (with coat)

b) The aide says, "Do you want to eat your lunch?"

c) The peer says, "Want to swing?"

STEP 7: The prompt. If the student does not respond or responds incorrectly the other person then prompts.

Examples: a) The teacher gets the coat from the student and waits for a verbal response before offering it

b) The aide says, "Show me what you want." while leading the student to the lunch

c) The peer physically helps the student sign "swing"

STEP 8: The model. If the student still does not respond or responds incorrectly the teacher tells or shows the student the correct response and if appropriate requests the response from the student.

Examples: a) The teacher says, "Button," providing a verbal model for the student to imitate

b) The aide points to the lunch and waits for the student to imitate

c) The peer demonstrates by signing "swing" and waits for the student to sign.

STEP 9: The confirmation. When the student demonstrates the response that the teacher has in mind, whether verbal or gestural, the teacher confirms the response so the student knows the answer is correct, models the elaborated communication and gives the student what was initially requested: help (getting a coat buttoned), an object (the lunch), permission (to play on the swings.)

Examples: a) The teacher says, "Oh, you want me to button your coat. There, I buttoned your coat."

b) The aide says, "I see...you want the lunch."

c) The peer says, "You want to swing, ok."

As an instructional strategy, used with autistic students, the aim of incidental teaching is to help these students improve their communicative competencies. The examples just given presuppose the existence of appropriate conditions for the use of this teaching strategy. This may not always be the case. Teachers must establish some decision rules for the appropriate use of incidental teaching strategies. Incidental teaching can best be implemented when there is something the student needs or wants from the teacher, the teacher has time to pay attention and respond to the student and the teacher has in mind a communication goal for the student. Incidental teaching is an appropriate tool only when the teacher has every intention of delivering to the student that which is being requested. If the teacher cannot comply and intends to deny the request, she should do so and not attempt to use incidental teaching.

As important as knowing when to use incidental teaching is knowing when to stop using it. When incidental teaching is brief and enjoyable for both the student and the teacher, the student may initiate more frequent interactions as a consequence, creating more opportunities for use of this technique by the teacher. If the teacher begins to notice frustration either in himself or the student by Steps 7 or 8 in the sequence above, she should terminate the session rather than continue to demand a response. One good way to do this is to ask a very easy question, one to which the student is likely able to give a correct response. When the student responds the teacher can then confirm the response, give that which was requested and end the interaction in a positive fashion.

A teacher may decide to use incidental teaching only to find that once a request is made the student then seems disinterested. It is possible that the student was not really interested or simply wanted brief acknowledgement from the teacher. When this occurs the teacher may simply return to what she was doing or attempt to discern if the student is now interested in achieving some other goal and begin incidental teaching anew.

SPECIFIC STRATEGIES/LESSONS

Incidental teaching requires that the student first initiate a request or show interest in something in the environment. With the foregoing overview of incidental teaching and discussion of its usefulness as a technique to promote social/communicative behaviors in unplanned situations, the following strategies with directions for implementation are offered as a sampling of ways in which the classroom teacher can set up situations to promote student initiated social/communicative responses. These techniques are by no means exhaustive; the classroom teacher is encouraged to use them as a framework for further expansion.

The remaining pages of this guide consist of a series of ten lessons, four primary and six combination lessons for classroom teachers. The lessons consist of a definition, rationale and examples of the four strategies recommended to promote social/communicative responses in the incidental teaching context: opportunities for choice, out of reach, blocking access, and out of context. The teacher should identify one student for each of these four lessons. The teacher may choose to use the same student or different students. The lesson should be decided upon and written at least one day prior to its implementation so that the teacher will be familiar with what is planned and implementation can occur naturally throughout the day. Lesson planning/data collection sheets are provided, one for each of the ten lessons. On the lesson planning/data collection sheets record the student's name, date, lesson (i.e., choice, out of reach, blocking, out of context, or some combination of two of these strategies) and the targeted response. The targeted communicative response should be a behavior which the teacher can reliably identify and which the student reliably emits at an approximate level of 75 percent. This targeted behavior may be highly individualized for each student. Suggested transition times are delineated, however the classroom teacher may wish to modify these according to the unique make-up of the classroom environment. A minimum of seven transitions during the day are recommended. As mentioned earlier, lessons should be prepared in advance of planned implementation. For efficient use of time and ease of recording, the lesson planning sheets are designed such that recording of strategies delivered along with a record of the student's responses may be accomplished on the same sheet. The student's responses are simply checkmarked as to whether he responded spontaneously (spon) to the first presentation or question, responded after prompting (prompt), or did not respond (nr). It is further recommended that the lessons be completed in order on consecutive days.

The concept of incidental teaching demands that it not only be an effective tool but that it also be a positive experience for both the student and the teacher. With continued practice in the implementation of these strategies, incidental teaching will become a spontaneous and enjoyable method of promoting the initiation and maintenance of social/communicative interactions with autistic and severely handicapped students.

LESSON 1: OPPORTUNITIES FOR CHOICE

Definition

Opportunities for Choice: The clear presentation of two or more objects/materials/tasks from which the student is asked/prompted/given the opportunity to select one.

Rationale

Opportunities to make personal choices are often absent from the environments of the severely handicapped. Yet, by creating choice-making situations the teacher is providing both an opportunity for communicative interaction and an opportunity for the severely handicapped person to exert control over his actions and environment.

Examples

On the way to recess the teacher offers the student a choice of two or more playground toys;

When getting ready to go to lunch the teacher asks with which of two other peers the student would like to walk;

Upon entering the classroom in the morning the teacher offers two or more activities for the student to engage in while waiting for other students to arrive;

When changing from one planned activity to the next the teacher gives the student the opportunity to choose from specific options the second activity.

LESSON 2: DISRUPTING EXPECTIONS: OUT OF REACH

Definition

Out of Reach: The teacher purposefully places something out of the student's reach and waits a minimum of three seconds for the student to request the item before prompting him to do so.

Rationale

This technique along with the two that follow will most often be effective when the student must interact with the teacher in order to obtain desired objects or activities. Instruction can be delivered whenever a situation occurs in which the student is attempting to get something he desires or needs. By placing a desired object out of reach, the teacher may prompt communicative behavior from students with severe social and communicative handicaps.

Examples

When getting ready for recess place the student's jacket, hat, sweater, etc. out of their reach and ask, "What do you want?";

When changing from one activity to another, request the student to get materials for the activity which are placed out of reach;

When going out to recess place the student's preferred playground toy in sight but out of reach.

When getting ready for lunch place student's lunch bag out of reach.

LESSON 3: DISRUPTING EXPECTIONS: BLOCKING ACCESS

Definition

Blocking Access: The teacher purposefully blocks access to materials/tasks/settings and waits a minimum of three seconds for the student to respond before prompting him to do so.

Rationale

Blocking access to an anticipated task, object or setting may prompt communicative behavior from students with severe social and communicative handicaps. The blocking tactic is a natural prompt for communicative behavior if the student is in a familiar situation where the desired object, task, setting is clearly understood.

Examples

When ready to go outside for recess place yourself as a block between the student and the doorway;

When going to lunch place yourself as a block between the student and his lunch bag;

When directed to leave an individualized instructional activity and proceed to a group activity, block the student's passage to that area of the classroom;

During any free play activity when the student is attempting to secure desired materials or objects block student access to same;

When instructing a student to get materials from a shelf, stand between the student and those materials.

LESSON 4: DISRUPTING EXPECTIONS: OUT OF CONTEXT

Definition

Out of Context: The teacher intentionally gives the student materials/objects that are out of context for the situation (e.g., giving the student a book when it is clearly time to go to lunch).

Rationale

Spontaneous communicative behavior from severely handicapped students may be prompted when a teacher attempts to give them some object or material which is clearly inappropriate to the situation. This technique will be particularly effective in those situations where the appropriate expections can be clearly identified and anticipated by the student.

Examples

When ready for lunch offer the student a book in place of his lunch bag;

When going out to recess offer the student a chair that is close by;

When leaving for the day give the student a training task in place of his jacket.

LESSON 3: Disrupting Expections : Blocking Access

Student Response: Jill

Date: 4/30/84

Target Response: Pointing

TRANSITIONS	BLOCKING ACCESS	STUDENT RESPONSE		
		spontaneous	prompt	nr
A.M. Entry	Stand between Jill and classroom		✓	
Activity Change	Stand between Jill and free play area		✓	
Recess	Stand between Jill and door	✓		
Activity Change	Stand between Jill and chair		✓	
Lunch	Stand between Jill and lunch bag	✓		
Activity Change	Stand between Jill and shelf with work materials			
Recess	Stand between Jill and scooter board		✓	
P.M. Departure	Stand between Jill and school bus door	✓		

EXAMPLE

LESSON 1: Opportunities For Choice

Student:______________________________ Date:__________________

Target Response:____

TRANSITIONS	CHOICES OFFERED	STUDENT RESPONSE		
		spontaneous	prompt	nr
A.M. Entry				
Activity Change				
Recess				
Activity Change				
Lunch				
Activity Change				
Recess				
P.M. Departure				

LESSON 2: Disrupting Expections: Out of Reach

Student: ________________________ Date: ______________

Target Response: ________________________________

TRANSITIONS	OUT OF REACH	STUDENT RESPONSE		
		spontaneous	prompt	nr
A.M. Entry				
Activity Change				
Recess				
Activity Change				
Lunch				
Activity Change				
Recess				
P.M. Departure				

LESSON 3: Disrupting Expections : Blocking Access

Student Response:__________________________ Date:_________________

Target Response:____

TRANSITIONS	BLOCKING ACCESS	STUDENT RESPONSE		
		spontaneous	prompt	nr
A.M. Entry				
Activity Change				
Recess				
Activity Change				
Lunch				
Activity Change				
Recess				
P.M. Departure				

LESSON 4: Disrupting Expections: Out of Context

Student:________________________ Date:______________

Target Response:________________________________

TRANSITIONS	OUT OF CONTEXT	STUDENT RESPONSE		
		spontaneous	prompt	nr
A.M. Entry				
Activity Change				
Recess				
Activity Change				
Lunch				
Activity Change				
Recess				
P.M. Departure				

Lessons 5 through 6: Utilize the same format as lessons 1 through 4. Target two students and two strategies.

Lesson 5: Opportunities for Choice
Out of Reach

Lesson 6: Opportunities for Choice
Blocking Access

Lesson 7: Opportunities for Choice
Out of Context

Lesson 8: Out of Reach
Blocking Access

Lesson 9: Out of Reach
Out of context

Lesson 10: Blocking Access
Out of Context

LESSON 5: Opportunities For Choice/Out of Reach

Student:______________________ Student:______________________

Target Response:______________________ Target Response:______________________

TRANSITIONS	CHOICES	STUDENT RESPONSE			TRANSITIONS	REACH	STUDENT RESPONSE		
		spon	prompt	nr			spon	prompt	nr
A.M. Entry					A.M. Entry				
Activity Chg.					Activity Chg.				
Recess					Recess				
Activity Chg.					Activity Chg.				
Lunch					Lunch				
Activity Chg.					Activity Chg.				
Recess					Recess				

LESSON 6: Opportunities For Choice/ Blocking Access

Date: ____________

Student: ______________________ Student: ______________________

Target Response: ______________________ Target Response: ______________________

TRANSITIONS	CHOICES	STUDENT RESPONSE			TRANSITIONS	BLOCKING	STUDENT RESPONSE		
		spon	prompt	nr			spon	prompt	nr
A.M. Entry					A.M. Entry				
Activity Chg.					Activity Chg.				
Recess					Recess				
Activity Chg.					Activity Chg.				
Lunch					Lunch				
Activity Chg.					Activity Chg.				
Recess					Recess				
P.M. Departure					P.M. Depart				

LESSON 7: Opportunities For Choice/Out of Context

Date: ____________

Student: ______________________________ Student: ______________________________

Target Response: ______________________ Target Response: ______________________

TRANSITIONS	CHOICES	STUDENT RESPONSE			TRANSITIONS	CONTEXT	STUDENT RESPONSE		
		spon	prompt	nr			spon	prompt	nr
A.M. Entry					A.M. Entry				
Activity Chg.					Activity Chg.				
Recess					Recess				
Activity Chg.					Activity Chg.				
Lunch					Lunch				
Activity Chg.					Activity Chg.				
Recess					Recess				
P.M. Depart					P.M. Depart				

LESSON 8: Out of Reach/Blocking Acess

Date: ____________

Student: ______________________________ Student: ______________________________

Target Response: ______________________ Target Response: ______________________

TRANSITIONS	REACH	STUDENT RESPONSE			TRANSITIONS	BLOCKING	STUDENT RESPONSE		
		spon	prompt	nr			spon	prompt	nr
A.M. Entry					A.M. Entry				
Activity Chg.					Activity Chg.				
Recess					Recess				
Activity Chg.					Activity Chg.				
Lunch					Lunch				
Activity Chg.					Activity Chg.				
Recess					Recess				
P.M. Depart					P.M. Depart				

LESSON 9: Out of Reach/Out of Context Date: ____________

Student: ______________________________ Student: ______________________________

Target Response: ______________________ Target Response: ______________________

TRANSITIONS	REACH	STUDENT RESPONSE			TRANSITIONS	CONTEXT	STUDENT RESPONSE		
		spon	prompt	nr			spon	prompt	nr
A.M. Entry					A.M. Entry				
Activity Chg.					Activity Chg.				
Recess					Recess				
Activity Chg.					Activity Chg.				
Lunch					Lunch				
Activity Chg.					Activity Chg.				
Recess					Recess				
P.M. Depart					P.M. Depart				

LESSON 10: Blocking Access/ Out of Reach

Date: ____________

Student: ______________________________

Target Response: ______________________________

TRANSITIONS	BLOCKING	STUDENT RESPONSE spon	 prompt	 nr
A.M. Entry				
Activity Chg.				
Recess				
Activity Chg.				
Lunch				
Activity Chg.				
Recess				
P.M. Depart				

Student: ______________________________

Target Response: ______________________________

TRANSITIONS	REACH	STUDENT RESPONSE spon	 prompt	 nr
A.M. Entry				
Activity Chg.				
Recess				
Activity Chg.				
Lunch				
Activity Chg.				
Recess				
P.M. Depart				